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Attributions and coping with uncontrollable, negative events :: the case of breast cancer/

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ATTRIBUTIONS AND COPING WITH UNCONTROLLABLE, NEGATIVE EVENTS: THE CASE OF BREAST CANCER

A Thesis Presented

By

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To my parents

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ABSTRACT

The purpose of this study was to examine the relationship between causal attributions for the uncontrollable, negative event of breast cancer and coping with the event. A total of 42 women who had undergone mastectomy as treatment for breast cancer were intensively interviewed. Both quantitative and open-ended questions were used to elicit attributions of causality by respondents. Respondents completed four coping measures that assessed depression, emotional state, self-esteem and resumption of pre-mastectomy activities. An attributional model of coping was constructed to examine the hypothesis that causal attributions would be associated with adaptive coping to the extent that they enabled the respondents to feel invulnerable to future cancer. Results showed that coping responses were successfully predicted by perceptions of invulnerability; invulnerability was successfully predicted by perceived success of mastectomy in removing all the cancer and perceived avoidability of a recurrence of cancer. Causal attributions to the controllable factor of behavior were linked to adaptive coping; causal attributions to the non-modifiable factors of other people and personality were linked to poor coping. A sample of 11 husbands of respondents completed questionnaires that included measures of their wives' ability to cope with breast cancer and mastectomy; there was significant agreement between husbands and wives concerning the wives' coping responses. Respondents' answers to "Why me?" and their perceptions of changes in their lives post-mastectomy were also examined.

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C H A P T E R I

INTRODUCTION

The study presented here explored how people cope with uncontrollable, negative events. In particular, it examined the relationship between causal attributions for the uncontrollable, negative event of breast cancer and coping with the event. Through interviews with breast cancer victims, the study investigated the attributional strategies which are adaptive and maladaptive in coping with breast cancer. Thus the study was intended to provide a fuller understanding of how victims of uncontrollable, negative events in general, and victims of breast cancer in particular, might best cope with their misfortune.

Facts on Breast Cancer

Breast cancer is the leading site of cancer incidence and death among American women. One out of 11 women will develop breast cancer in her lifetime (American Cancer Society, Note 1). There is no known cause of breast cancer; there is, rather, only a high-risk profile. Thus the focus of health-related behavior in breast cancer is not prevention, but early detection. Early detection is best accomplished by practicing breast self-examination (BSE), obtaining regular medical check-ups, and presenting oneself to a physician immediately after finding a breast irregularity.

The standard treatment for breast cancer is surgery, which may be supplemented by radiation therapy and/or chemotherapy. The most common

surgical procedure for the treatment of breast cancer is modified radical mastectomy, which includes removal of the breast and axillary lymph nodes. There is currently considerable controversy, however, as to the optimal surgical procedure for treating breast cancer, due to accumulating evidence which suggests that less extensive surgery yields comparable survival rates.

Another source of controversy surrounding the treatment of breast cancer concerns the use of one stage versus two stage surgical procedures. In a one stage procedure the diagnosis of breast cancer is not separated from its treatment. If a biopsy shows a breast tumor to be cancerous, the surgeon proceeds with mastectomy while the patient is still under anesthetic. Thus a woman "signs away" her breast even before a biopsy shows whether or not she has cancer. In a two stage procedure a diagnostic biopsy is performed first, the findings and treatment possibilities are discussed with the patient if cancer is found, and more definitive treatment is performed a few days later.

Although the one stage procedure has been the traditional method of diagnosing and treating breast cancer, the two stage procedure is now being recommended more often for the psychological benefit of all women undergoing biopsies. A one stage procedure does not allow the woman who must have a mastectomy to be adequately psychologically prepared for the post-surgery repercussions of learning simultaneously that she has cancer and that her breast has been removed. And since at least eight out of ten women who have biopsies do not have cancer (U.S. Department of Health, Education, and Welfare, Note 2), they should not have to suffer the unnecessary stress of "signing away" their breast

before biopsy, as a one stage procedure requires.

It is clear that success in treating breast cancer depends on the stage at which it is first diagnosed, as well as its response to various therapies. Chances for the recovery and cure of breast cancer are significantly greater when the disease is detected at an earlier, more localized stage. The axillary lymph nodes provide the best clue as to whether cancer has spread beyond the breast. When breast cancer is discovered in a localized (confined to the breast) stage, the five year survival rate is 85%. If the cancer has spread to axillary lymph nodes, the five year survival rate falls to 56% (ACS, Note 1).

The presence of a malignancy in one breast increases the possibility of tumor development in the opposite breast (Goldsmith and Alday, 1971). An estimated 10-15% of women who have had cancer in one breast will develop it in the other (U.S. Department of HEW, Note 2). A review of survival data has revealed, however, that women who die of breast cancer succumb not to local recurrence, but to metastatic spread to vital organs (Tishler, 1978).[1] The majority of victims who suffer recurrences or metastases do so within two years of their initial therapy, but a significant proportion of deaths occur five or more years later (Kushner, 1975).

Emotional symptomatology of breast cancer. There is no question that breast cancer has a tremendous emotional impact on its victims. The intensity of a woman's reaction to breast cancer is determined by objective events in her physical and social environment, as well as by her personality and emotional dispositions. All breast cancer victims

share some common experiences and emotional reactions, but the total experience of having breast cancer takes on a different meaning for each individual. The events in therapy for breast cancer are sequential, and thus emotional responses to the phases of treatment also form a sequence.

Upon discovering a breast abnormality, a woman is likely to feel anxious and frightened because an abnormality signals the possibility of cancer. The onset of symptoms may arouse anticipatory anxiety about treatment and possible mutilation, as well as speculations as to the effect that having breast cancer would have on one's family. When a woman discovers a lump in her breast, she is likely to relate her problem and her future to what she has learned from others with a breast cancer diagnosis (Dietz, 1969). Excessive anxiety or fear is thought to cause delay in seeking treatment for breast irregularities, because such emotionality leads to the denial or avoidance of symptoms (Aitken-Swan and Paterson, 1955; Bard and Sutherland, 1955; Greer, 1974). Although emotional responses play an important role in delay behavior, cognitive responses, such as a woman's knowledge base about breast cancer, are also important (Taylor and Levin, 1977). Delay in seeking treatment for a breast abnormality is one of the major problems associated with breast cancer.

No systematic research has been done on a woman's first visit to her doctor about a breast cancer symptom, or her initial contact with the surgeon, despite the fact that the communications that take place during these early medical visits probably strongly influence the woman's emotional state. Following the first visit to the doctor confirming

that a suspicious symptom is present, additional tests in consultation with a surgeon are usually required. Depending on the outcome of these further tests, a biopsy may be called for. Once the decision to have a biopsy has been made, it must also be decided whether a one or two stage procedure is advisable.

Both women undergoing one stage procedures, and women with a positive biopsy undergoing two stage procedures, finally have to face the prospect of surgery. Pre-surgery emotional issues center around three major fears: fears about the operation itself, fears about the possibility of breast loss, and fears about cancer (Goldsmith and Alday, 1971). There is no general agreement as to which of these fears is predominant (see Bard and Sutherland, 1955; Harrell, 1972; Katz et al., 1970; Renneker and Cutler, 1952). The issue is complicated by the fact that no distinctions are made between pre-biopsy patients undergoing one stage surgical procedures, and patients with diagnosed breast cancer who face certain mastectomy. Thus which fears are predominant in which group is, at present, an unresolved question. Taylor and Levin (1977) hypothesize that pre-biopsy patients tend to be concerned with breast loss, while those patients who have already had a biopsy are most concerned with whether or not the cancer will be caught in time (see Kushner, 1975).

Fears about the operation itself center around fear of death during surgery, and the effect that one's death would have upon loved ones. Some women dread the loss of consciousness and control brought about by anesthesia, while others view being "out" as a welcome escape (Bard, 1952; Bard and Sutherland, 1955). Fears about possible loss of the

breast center around fear of deformity and disfigurement, as well as concerns about subsequent sexual relationships, which may be affected by the loss of interest on the part of others and oneself. Fears about cancer center around awareness of a relationship between cancer and death. The general conception of cancer is one of a horribly painful, and above all, incurable disease (McIntosh, 1974). Therefore, the diagnosis of cancer is likely to create a confrontation with one's own mortality.

That pre-surgery patients are stressed is uniformly accepted. Pre-operative symptoms of depression and anxiety include: nightmares, insomnia, lack of appetite, inability to concentrate, tachycardia, excessive perspiration, headaches, and constipation (Bard, 1952; Bard and Sutherland, 1955; Katz et al., 1970). To what extent observable stress occurs because of uncertainty is not known. That is, patients who face a one stage procedure may suffer particularly acute anxiety because they do not know what they are preparing for (Taylor and Levin, 1977). It is at this time that many women seek out information about breast cancer and its treatment, by consulting printed sources and soliciting expert and non-expert opinions. Gathering information is a common response to situations of emotional uncertainty, and is likely to be undertaken by cancer patients, who are usually unsure about the extent and prognosis of their disease (McIntosh, 1974).

Upon regaining consciousness after surgery, women undergoing one stage procedures are likely to try to assess "the extent of the damage" (Bard and Sutherland, 1955). Research on initial post-mastectomy reactions suggests that there are three dominant responses: shock,

denial, and the appearance of relative unemotionality; depression and continual crying; or anger and resentment (Taylor and Levin, 1977). Pre-surgery symptoms of anxiety and depression may continue through this phase (Bard, 1952; Renneker and Cutler, 1952). There is no disagreement over the need for counseling in the rehabilitative phase. There is disagreement, however, as to the issues around which counseling should center, when it should begin, and who should provide it.

Reach to Recovery, a service activity of the American Cancer Society, is a major source of post-mastectomy support (Markel, 1971). Reach to Recovery volunteers are women who have successfully adjusted to the loss of a breast. They visit mastectomy patients in the hospital shortly after surgery, if requested to do so by the physician. The volunteers are carefully selected and trained, and are instructed not to discuss medical or emotional problems with the patient. The Reach to Recovery program is based on the concept that the volunteer acts as a positive role model by demonstrating that a woman can function normally after mastectomy. The patient is given pamphlets about successful rehabilitation, and is instructed on exercises that will help her begin to regain the use of her arm. The Reach to Recovery pamphlets stress feminine self-concept, by urging the woman to look her best, think about her accomplishments as a woman, and work on exercises in order to regain her physical functioning.

Being discharged from the hospital presents another emotionally laden issue for many mastectomy patients. Women at this time are either reluctant or eager to return home. A dread of returning home is thought to reflect the woman's lowered self-esteem and fears of social

unacceptability resulting from her cancer and disfigurement, and is considered maladaptive (Bard, 1952; Bard and Sutherland, 1955). Once home, women may restrict their physical and sexual activity because they fear injury to the site of the operation. The whole body may be perceived as more vulnerable to injury as a result of the surgical procedure (Bard and Sutherland, 1955; see Rollin, 1976). Daily activities such as choosing clothes to wear, dressing, and bathing may constitute major problems to the woman who has recently undergone mastectomy, because of physical restrictions and their accompanying emotional difficulties. Women may try to put off resuming their normal activities as long as possible, or they may try to resume their normal functioning too soon. Most women resume their normal daily activities between one and three months following their initial therapy (Shottenfield and Robbins, 1970).

Post-operative complications and therapies pose an additional threat to a woman's emotional rehabilitation after mastectomy. Such complications and treatments are likely to cause prolonged emotional upset and agitation (Meyerowitz, 1980; Quint, 1963). Short-term radiation therapy is used for control of localized cancer, or for reducing the likelihood of recurrence in mastectomees whose cancer has spread to a small number of axillary lymph nodes. Long-term chemotherapy is given to reduce the chances of recurrence in patients whose cancer has spread to a greater number of axillary lymph nodes. Radio- and chemotherapy often have the following physical side-effects: changes in taste acuity and appetite, nausea and vomiting, gastrointestinal disorders, hair loss, skin discoloration, lethargy, and lowered resistance rates. Meyerowitz (1980) suggests that the psychosocial effects of involvement in these treatments

are likely to be more disruptive than those to be expected for women facing mastectomies only. Furthermore, the coping mechanisms necessary to deal with these treatments may differ from those required in dealing with the mastectomy itself. For example, participation in further treatment probably forces patients to face on a regular basis the fact that their operation did not ensure a cure, as well as the seriousness of their disease and the possibility of recurrence. It may also be the case, however, that receiving follow-up treatment is reassuring and anxiety-reducing for women who want to believe that everything possible is being done for their health.

There are several major psychological and emotional issues which all mastectomy patients must face. These include: coming to terms with breast loss, coming to terms with having cancer, fear of recurrence of cancer (i.e., feelings of vulnerability), and problems of communication. Each of these issues will be considered in turn.

Coming to terms with breast loss. The loss of a breast can constitute a blow to femininity, and produces an alteration in body image (Ervin, 1973; Harrell, 1972; Meyerowitz, 1980; Renneker and Cutler, 1952). A mastectomy patient may doubt her self-worth and acceptability as a woman, resulting in feelings of shame and worthlessness (Bard and Sutherland, 1955), and she is likely to be concerned about the changes in her bodily and personal appearance (Quint, 1963). To the extent that the woman identifies with her body image, interpersonal relations and achievement situations may be adversely affected, thus bringing about a lessened self-image overall (Taylor and Levin, 1977). The woman may

fear, often realistically, that as a deformed and disfigured person she will be held in low esteem by others, including people with whom she has intimate and non-intimate relationships. For the mastectomy patient to come to full equilibrium, she must learn to accept the loss of her breast by fully mourning that loss (Klein, 1971), and must re-integrate her feminine and bodily self-image. In other words, a mastectomy patient must come to terms with both the loss of her breast and what is left (Taylor and Levin, 1977). The reintegration of self-image may be facilitated by obtaining a prosthesis as soon as wearing one is possible. Reconstructive surgery is another method whereby women can adjust to breast loss, although it is not an option for every woman.

Coming to terms with cancer--attributions. Another psychological issue that arises post-mastectomy is coming to terms with having cancer. The knowledge that one has cancer sets in motion the important psychological process of searching for a cause of the cancer (Taylor and Levin, 1977). Cancer patients appear to have a need to find a cause for their illness (Abrams and Finesinger, 1953; Bard and Dyk, 1956). Meyerowitz (1980) proposes that the search for causes is a means by which patients attempt to integrate and cope with the knowledge of cancer, as well as with the effects of its treatment. Taylor and Levin (1977) suggest more specifically that the search for the genesis of one's cancer may occur to bring about feelings of predictability and control, or it may result from an inability to accept randomness.

Janoff-Bulman and Lang-Gunn (1980) present evidence that a victim

of any serious disease may feel "singled-out" by the misfortune, which evokes a need to explain why the illness struck him or her in particular. Thus it is the perceived selective incidence of the disease which is especially troublesome for victimized individuals, and leads them to ask the question, "Why me?" The search for causal attributions may be viewed therefore as an attempt to find a personally satisfying response to this question. Janoff-Bulman and Lang-Gunn suggest, in fact, that since the causes of a serious illness such as cancer are often beyond an individual's control, understanding why he or she was "singled-out" may be more crucial in efforts to make sense of the victimization than the actual causes of the illness.

Mastectomy patients invent causes for their disease, despite the fact that there is no known cause of breast cancer. Many patients blame themselves for their cancer (Abrams and Finesinger, 1953; Bard and Dyk, 1956; Taylor and Levin, 1977), viewing it as just retribution for past behaviors, such as insensitivity to others or negligence in seeking treatment for symptoms. Some women experience mastectomy as punishment for forbidden sexual fantasies and practices (Tishler, 1978), or for prior transgressions and sins in general. Other patients blame another person for their cancer, such as a husband or lover who has made excessive sexual demands. Alternatively, these patients may believe that they caught or inherited the disease from someone else. Another group of patients blames objects for their cancer, such as microwave ovens, color television sets, or birth control pills. A common misconception as to the cause of breast cancer is that it can be caused by an injury to the breast, such as a fall or blow. Also commonly misperceived is

what can prevent breast cancer. For instance, breast feeding is often believed to have a preventative effect.

Fear of recurrence and feelings of vulnerability. A further psychological issue which arises post-surgically for the breast cancer victim is fear of recurrence of cancer. Concern about recurrence may be experienced even before a breast tumor has been diagnosed as malignant (Bard, 1952). However, fear of recurrence tends to be most prominent after primary treatment, and gradually diminishes with time, although it persists for years. It may be dramatically reactivated by follow-up visits to the doctor, and by reminders of cancer in the environment (Mages and Mendelsohn, 1979).

Any serious illness or injury highlights the uncontrollable nature of life events and underscores the vulnerability of the victimized individual (Janoff-Bulman and Lang-Gunn, 1980). Cancer, however, appears to be somewhat unique in its ability to arouse feelings of vulnerability and fear (Wortman and Dunkel-Schetter, 1979). For the individual recently diagnosed as having cancer, an environment that previously was at least tolerable has now become threatening and unpredictable. The patient's former assumptions and beliefs about the world and the self (i.e., "It won't happen to me") are brought into question, and he or she is forced to contend with the psychological issue of personal vulnerability.

In a review of the literature on victimization, Janoff-Bulman and Lang-Gunn (1980) reported that individuals who have lost their sense of personal invulnerability frequently manifest maladaptive psychological

symptoms. The relationship between the loss of invulnerability and poor coping by victims of cancer in particular has been recognized by Weisman (1979), who asserted that a state of vulnerability is undesirable. When expressed by cancer patients, feelings of vulnerability were found to be associated with symptoms of emotional distress, such as depression, powerlessness, and low self-esteem. Weisman conceptualized vulnerability as "a condition of helpless uncertainty," which he called "existential despair." He explained, "The concept of 'vulnerability' is intended to designate different types, degrees, and fluctuations of distress over time. Because it is inversely related to effective coping, vulnerability is also an implicit measure of noncoping" (p. 56). Those patients who Weisman found to cope poorly with the event of cancer reported feeling "irreparably damaged and destined to deteriorate." Interestingly, Weisman also found that the extent to which patients felt vulnerable was not directly proportional to the degree of serious illness. Regardless of prognosis, cancer patients who coped well perceived themselves as relatively invulnerable when contemplating the future, while poor copers scored high on measures of vulnerability.

An uncertain future is one of the major impacts that breast cancer has on its victims. Changes in physical signs and symptoms take on a new meaning, and are used as cues for testing the future (Quint, 1963). With the development of any new symptom, whether it is related to cancer or not, the patient relates this to her disease and to the possibility that it represents recurrence (Burdick, 1975). Similarly, most women view any complications that arise post-surgically as evidence of recurrent disease and the need for additional surgery (Bard, 1952). Mastectomy

patients may mistake the side-effects of follow-up therapies for side-effects of the disease, assuming erroneously that their cancer has recurred or an already present one has worsened (Taylor and Levin, 1977; Wortman and Dunkel-Schetter, 1979). A large number of mastectomy patients are fearful of losing the remaining breast. Often radical mastectomy patients experience painful sensations in the remaining breast, and sometimes actual enlargement of the breast, even in the absence of disease or any other physiological finding (Bard, 1952; Bard and Sutherland, 1955).

The fear of recurrence of cancer may be quite paralyzing and influence life decisions profoundly. In order to live with this fear it is necessary for the cancer patient to be able to put it out of mind most of the time, while remaining sufficiently aware of the realities to continue appropriate medical follow-up (Mages and Mendelsohn, 1979). Thus a major factor in reaching psychological equilibrium after mastectomy is making peace with potential recurrence, a fear with which the breast cancer victim will have to live for five or ten years following her initial therapy (Klein, 1971).

Communication. A remaining problem facing breast cancer victims is the issue of communication. The mastectomy patient must decide who to tell about her cancer and operation, and how to do it. Klein (1971) suggests that members of the hospital staff should help women make these decisions.

Breast cancer has traditionally been a "closet" disease. Women typically do not openly announce the fact that they have had breast cancer for presumably many reasons, including: the stigma of cancer, the trauma of breast loss, shame and embarrassment, the fear of being

responded to as a freak, and the possibly realistic expectation of discrimination (Taylor and Levin, 1977). A large proportion of radical mastectomy patients are extremely secretive about having had the operation, and are deeply concerned that others will discover it. Usually they will talk only with doctors, relatives, and intimate friends about it (Bard and Sutherland, 1955). A mastectomy patient is likely to feel as though she has few outlets for talking about her concerns, and as a result may feel terribly lonely (Quint, 1963). Once a woman resumes her normal social activities, she may wonder who around her already knows about her disease and operation, and who doesn't (see Rollin, 1976).

Obviously, there are most likely significant people in a mastectomy patient's life who must be told about the cancer and its treatment. There is no question that support and understanding by the family, and particularly by the husband if the woman is married, have a major role in resolving feelings about the breast cancer experience. Cancer patients who do not receive support from their family and friends have more difficulty in coping with their illness, and are less likely to cooperate with treatment regimens (Wortman and Dunkel-Schetter, 1979).

The breast cancer victim must learn how to cope with her own and others' reactions to her disease and surgery. Coates, Wortman and Abbey (1979) indicate that people often form negative attributions about victims, and so victims may frequently have problems in their interactions with others. Although victims need, desire, and seek out support from other people, they may often find that such social support is very difficult to find. Some of the same actions which enable victims to cope best with their misfortune are also most likely to aggravate the negative

attributions of observers. Those people interacting with victims may dissuade them from beliefs and actions which are actually quite helpful to them in coping with their situation. For example, the typical victim's behavior of expressing negative affect and self-blame may facilitate a victim's personal adjustment, but be judged as maladaptive by observers. Thus, according to these authors, victims' coping needs and others' attributional biases may sharply conflict. Victims may be trapped in a complicated dilemma in which they can maximize their social acceptance only at the expense of their personal adjustment.

Wortman and Dunkel-Schetter (1979) provide evidence that cancer victims experience considerable difficulty in their interpersonal relationships as a function of their disease. Communication barriers in the social environment of cancer patients make it difficult for them to attain the support and clarification of thoughts and feelings they need. While other people are likely to feel negatively about the patient's illness, they are also likely to believe that they should remain positive, optimistic, and cheerful when interacting with the patient. This conflict results in behaviors on the part of others which are unintentionally harmful to the cancer victim. The discrepant and contradictory behaviors often displayed toward a cancer patient include physical avoidance of the patient, and avoidance of open communication about the disease and its effects. Right at the time when communication and support from others is especially important, the patient may interpret this ambiguous and negative social feedback as rejection. Patients may respond with behaviors that further exacerbate their interpersonal problems rather than solve them. Personal accounts of mastectomees' experiences reveal

that the communication problems outlined by Coates et al. (1979), and by Wortman and Dunkel-Schetter (1979), are likely to be encountered by victims of breast cancer (see Kushner, 1975; Rollin, 1976).

Quality of survival. Research concerning long-term follow-up of mastectomy patients indicates that quality of survival is quite good. Eisenberg and Goldenberg (1966) evaluated the ability and capacity of 252 mastectomy patients to resume their pre-operative responsibilities. Eighty-three percent of the patients had taken up their pre-operative responsibilities within two years following mastectomy. Shottenfield and Robbins (1970) similarly studied quality of survival in 826 women who had undergone radical mastectomy. The measures used were work status and self-reports of ability to perform daily activities. Five years post-surgery, 84% of the surviving patients had fully resumed their pre-operative activities. At 10 and 15 years following surgery, 91% and 88% of the patients, respectively, were functioning at a pre-operative level. Recurrence predicted failure to resume activities at 5 years, but not at 10 and 15 years after surgery. Craig, Comstock and Geiser (1974) studied 134 mastectomees who for the most part had been diagnosed with breast cancer five or more years prior to the study. These mastectomy patients were compared to a control group drawn from a non-mastectomy population on physical and psychosocial functioning. Mastectomees rated themselves as equally happy, equally positive about the future, and were equally as likely to be successfully employed. The only negative differentiating factor for the mastectomy population was a higher incidence of physical disability. These studies taken together allow at least a cautious

optimism regarding the mastectomy patient's eventual ability to resume her normal emotional, social, and vocational functioning.

Psychological interpretations of emotional reactions to breast cancer. The most prevalent approach to interpreting the emotional symptomatology of breast cancer is based on a psychodynamic framework (Taylor and Levin, 1976). The common psychiatric view of the psychological aspects of breast cancer centers around the assumption that breast loss seriously threatens a woman's psychic balance. Fear of breast loss along with fears of surgery, cancer, and death, are thought to arouse strong intrapsychic conflicts that can be coped with only through defense mechanisms. According to the psychodynamic framework, women after mastectomy are depressed and angry because losing a breast awakens long repressed neurotic conflicts concerning their femininity. The breast is viewed as the emotional symbol of a woman's pride in her sexuality and in her motherliness. Therefore, to threaten the breast is to threaten the very core of a woman's feminine orientation. Indeed, some researchers have suggested that breast loss for women is equivalent to castration for men (see Dietz, 1973; Renneker and Cutler, 1952). Thus the psychodynamic perspective emphasizes the meaning of the breast as the central psychological issue of breast cancer.

Complementing the psychodynamic interpretation of the emotional reactions to breast cancer is the patient participation model of Taylor and Levin (1976), which is based on a social psychological framework. These authors argue that the breast cancer patient experiences stress in reaction to situational factors, at least as much as in response to

internal conflicts. The patient participation model poses as a central construct the idea that informed participation and a sense of personal control are crucial determinants of a woman's reactions to the stress of having breast cancer. The course of events in breast cancer often involves loss of control by the woman over her own body and life. (This is seen most dramatically in women undergoing one stage surgical procedures.) According to Taylor and Levin (1976), returning to patients some sense of control actually enhances coping with surgical pain and treatment discomforts, and speeds recovery rates. A sense of personal control is most effectively achieved through informed participation, whereby the patient is informed of the medical procedures and their accompanying physical sensations, and is permitted to take part in the decision-making concerning her various treatments. Thus the patient participation model is a model of stress that postulates an objective situation of threat and cognitive mediators of coping responses as the major psychological issues of breast cancer.

In the study presented here the psychological experience of having breast cancer was viewed primarily from the social psychological framework of Taylor and Levin (1976, 1977), in that cognitive mediators of coping responses were examined. Specifically, the study explored the relationship between victims' causal attributions for the uncontrollable, negative event of breast cancer and coping with the event. The main focus of the study was to determine the attributional strategies which are adaptive and maladaptive in coping with breast cancer, through interviews with breast cancer victims.

Evidence has been presented indicating that cancer victims' causal

attributions for their disease represent cognitive attempts to understand and explain its occurrence. Determining the cause of one's cancer appears to be an intrinsically important part of the coping process. Evidence has also been presented suggesting that the event of cancer is likely to shatter the victim's former illusions of personal invulnerability, and that the loss of invulnerability entails a difficult psychological adjustment. In fact, cancer patients who felt relatively invulnerable coped better than those who expressed feelings of vulnerability (Weisman, 1979).

It may be that people's causal attributions for a victimizing event are directly linked to the desire to minimize their own vulnerability to victimization in the future (Janoff-Bulman and Lang-Gunn, 1980). Thus the extent to which attributions of causality enable a victim to re-establish a sense of invulnerability may be an indication of the relative adaptiveness of attributional strategies. In the case of victimization by cancer, recovering a sense of invulnerability presumably is equivalent to believing that one will be free of cancer in the future. This leads to the hypothesis that causal attributions for the event of breast cancer will be associated with adaptive coping, to the extent that the attributions enable the victim to believe that she will remain free of cancer. To the extent that an attribution increases the victim's feelings of vulnerability, by increasing the perceived likelihood of a recurrence of cancer, the attribution will be associated with maladaptive coping.

One means by which a breast cancer victim might regain her sense of invulnerability would be for her to perceive the avoidability of cancer

in the future as within her own control. Perceived personal control over the avoidability of a recurrence of cancer may be established by believing that the past event of breast cancer could have been avoided by oneself. That is, if a victim believes that she could have avoided cancer in the past, this may enable her to believe that she can avoid a recurrence of cancer in the future. Therefore, causal attributions which maximize the victim's perceived personal control over the avoidability of cancer in the past and future may be associated with adaptive coping. Such attributions which allow the victim perceived personal control in maintaining health and thereby a sense of invulnerability are likely to involve self-blame attributions. In the sections that follow, the roles of perceived personal control and self-blame in coping with victimization are discussed.

Perceived control. Janis and Rodin (1979) define perceived control as expectations of having the power to participate in making decisions in order to obtain desirable consequences. One aspect of perceived control is perceived control over outcomes. This refers to the individual's belief in a causal link between his or her own actions, or action capabilities, and the consequences that follow. The crucial component in perceived control is the assumption people make that they are responsible for their outcomes because of their own efforts.

There is now a substantial literature indicating that both perceived and real control over present or impending harm have a considerable effect on coping with stress (Averill, 1973; Gal and Lazarus, 1975; Janis and Rodin, 1979). Specifically, personal control is thought to

aid adjustment to stress, although the relationship is not simple or straightforward, and depends upon the meaning that control has for the individual. Issues of perceived control are especially relevant to health-related attitudes and behaviors. Although feelings of control are not universally beneficial for patients, in most aspects of health care there can be potential benefits from increasing the patient's opportunities to exercise control (Janis and Rodin, 1979).

In a review of the personal control and causation literature, Wortman (1976) indicates that people prefer to blame themselves rather than chance for negative events in their lives. This may serve to increase perceived control and reduce the perceived possibility of a repetition. Coates, Wortman and Abbey (1979) similarly indicate that self-blame is a very common reaction among victims of undesirable life events. People frequently take personal responsibility for negative outcomes, even outcomes which they have had little influence in producing. These authors state that self-blame is not only very common among victims, but also appears to be advantageous for at least certain kinds of victims in certain situations. Researchers differ, however, in their analysis of the function of self-blame, and in their evaluation of whether self-blame is adaptive in coping with uncontrollable, negative events.

Victimization and self-blame. In recent years, social psychologists have begun to take a new look at victimization. Theorists have suggested that reactions to victimization are affected by three motives: (1) to maintain one's belief in a just world (Lerner, 1965, 1971; Lerner

and Matthews, 1967; Lerner and Simmons, 1966); (2) to perceive oneself as having control over one's environment (Kelley, 1971; Walster, 1966); and (3) to protect oneself from blame (Shaver, 1975).

According to the just world hypothesis, all of us have a need to believe that people get what they deserve and deserve what they get. In a series of experiments by Lerner and his colleagues, it was found that when subjects observe a victim of misfortune they are likely to either blame or derogate the victim. The issue of how patients themselves react when they are victimized by illness has not been addressed directly by Lerner and his colleagues. However, it seems to follow from the just world hypothesis that people should be motivated to believe that they deserve the outcomes they receive. If so, people who are victimized by illness will either blame themselves or will reevaluate the outcome as desirable.

Another motivational bias for derogating victims emphasizes a desire for control. According to Walster (1966), observers of a severe accident assign blame to its victim in order to gain reassurance that they will be able to avoid similar misfortune in the future. If causality were assigned to an unpredictable and uncontrollable set of circumstances, observers would be forced to concede that such an event might happen to them at any time. This emphasis on the desire for control has also been taken up by Kelley (1971). According to Kelley, attribution processes are to be understood partially as a means for the individual to maintain his or her effective exercise of control in the world.

Neither Walster nor Kelley have dealt specifically with how the desire for control might affect the attributions of people victimized

by illness and other misfortunes. However, it appears likely that this motive would lead victims to blame those factors that are most within their control, or those factors which are most readily modifiable. Thus a victim would be apt to attribute blame to his or her own behaviors if they were modifiable, or to environmental factors or other people if they were perceived as within the victim's control. Assignment of causality would rarely be made to chance since, according to Walster's analysis, it is the most uncontrollable of all explanatory factors.

The third hypothesis relevant to the issue of victimization has been put forth by Shaver (1975), and pertains to "defensive attribution." Shaver uses this term to suggest that people assign causality in such a way as to maintain or enhance their self-esteem. According to Shaver, observers' reactions to victims are affected by their desire to avoid blame for their own future accidents. Victims would be less likely to be blamed by observers, the more the observers believe that they could find themselves in the same situation as the victim. If observers believe that the same negative event could happen to them, the more likely they would be to blame chance for the victimizing incident. The "defensive attribution" theory leads to the prediction that victims of illness would ascribe their suffering to external factors rather than to their own shortcomings. Patients would attribute responsibility in this way in order to maintain a positive self-concept.

The three major theoretical models of victimization that have just been reviewed focus largely on how people react to the victimization of others. So far there has been little research bearing on the victims themselves. In one of the few relevant studies, Bulman and Wortman

(1977) examined the relation between paralyzed accident victims' attributions of causality for their accidents, and their ability to cope with their severe misfortune. It was found that the respondents were likely to blame themselves if they felt that they could have avoided the accident. Blaming another person and feeling that one could have avoided the accident were predictors of poor coping, while self-blame was a predictor of effective coping. Good copers tended to feel that the accident was unavoidable. Thus those individuals who felt that they could not have avoided the accident but nonetheless blamed themselves were also most likely to cope successfully with victimization.

In explaining the relationship among the variables of self-blame, perceived avoidability, and coping, Bulman and Wortman pointed out the factors that seemed to lead the respondents to attribute avoidability and blame to themselves. In trying to decide whether they could have avoided the accident, many respondents appeared to consider whether the activity they had been engaging in was a common one or an unusual one for them. If the activity was a common one they tended to view the accident as unavoidable, but if the activity was an unusual one they were more likely to see the accident as avoidable. When attributing blame to themselves for the accident, many respondents seemed to be influenced by the fact that they had been alone at the time it occurred, and that they had been voluntarily engaging in the activity because it was something they enjoyed doing. Those who coped worst displayed a sense of regret regarding the activity they had been engaged in at the time of the accident. Thus those respondents who were involved in freely chosen leisure activities when the accident occurred both attributed

blame to themselves and perceived the accident as unavoidable. This group of respondents coped better than those who were victimized under different kinds of circumstances.

Because perceived avoidability of the accident was negatively correlated with successful coping, the authors suggest that although feelings of personal control may generally be adaptive, they can be maladaptive when the individual is confronted with a permanent, non-modifiable outcome. Wortman and Brehm (1975) and Wortman (1976) have similarly suggested that "training" people to feel that they can influence and control their outcomes may have maladaptive consequences for individuals who are faced with outcomes that are truly uncontrollable. Bulman and Wortman point out that there may be important differences between predictors of effective coping for accident victims and predictors for those victimized in other ways. Accident victims are normal one day and injured the next, while disease victims often undergo a gradual process of breakdown. Furthermore, the permanent physical limitations imposed on the accident victims in the Bulman and Wortman study made the avoidance of recurrence a virtually irrelevant issue.

In another study, Chodoff, Friedman and Hamburg (1964) examined the coping behavior of families of children diagnosed as having leukemia. It was found that the parents often blamed themselves for their child's illness. The authors suggest that parents' self-blame often served a defensive purpose of denying the intolerable conclusion that no one was responsible for this malignant disease for which there are no known causes. It was concluded that personal blame for negative outcomes may facilitate coping.

Personal attributions for uncontrollable, negative events have also been thought to impair coping. Abrams and Finesinger (1953) view self-blame in cancer patients as a sign of maladjustment and emotional disturbance. Specifically, attributions of self-blame were believed to lead to maladaptive feelings of guilt. Feelings of guilt caused cancer patients to deny symptoms and thus delay seeking medical treatment. Guilt was also believed by the authors to stimulate attitudes of inferiority, inadequacy, and dependency, as well as feelings of rejection. When the patients' attitudes of self-blame were counteracted by realistic information designed to correct misattributions of personal responsibility, they were less likely to delay treatments and felt more adequate and less dependent. In this instance, self-blame was thought to impair coping because it prevented realistic appraisal of action that could be taken.

Taylor and Levin (1977) propose that it may not be necessary to dispel illusions of causes of cancer. This is particularly true if the perceived cause is a thing. These authors advise, however, that self-blame and blaming of other persons by cancer victims do suggest the need for clinical intervention.

Thus the working through of self-blame by victims of uncontrollable, negative events is viewed as adaptive by some researchers but as maladaptive by others. In an attempt to reconcile the apparently contradictory findings concerning the function of self-blame in coping with victimization, Janoff-Bulman (1979) distinguishes two types of self-blame. These are behavioral self-blame, which is control-related, and characterological self-blame, which is esteem-related. Behavioral

self-blame represents an adaptive response to misfortune, for it involves attributions to a modifiable source, one's behavior. Victims of negative events can blame themselves for having engaged in or failing to engage in a particular activity, thereby attributing blame to past behaviors. On the other hand, characterological self-blame represents a maladaptive response, for it involves attributions to a relatively non-modifiable source, one's character. Victims might blame themselves for the kind of people they are, thereby faulting their character traits. The major distinguishing factor between behavioral and characterological self-blame is the perceived controllability of the factors blamed. Behavioral self-blame follows from attributions to controllable factors, whereas characterological self-blame follows from attributions to uncontrollable factors.

Another distinguishing factor between behavioral and characterological self-blame lies in the time orientation of the victim. In blaming oneself behaviorally, an individual is concerned with the future, particularly the future avoidability of the negative outcome. Individuals who engage in characterological self-blame are not concerned with control in the future, but are likely to focus on the past and what it was about them that rendered them deserving of the negative outcome for which they are blaming themselves. Therefore, behavioral self-blame and perceived avoidability are assumed to be part of the same blame cluster, while characterological self-blame and feelings of deservingness are representative of another blame cluster. Thus, in blaming oneself characterologically, the individual is not necessarily attributing blame for an event perceived as personally controllable. A victim can believe that he or

she deserved what happened, without believing that he or she is capable of altering the outcome in the past, present, or future.

In one study, Janoff-Bulman (1979) found that depressed female college students engaged in more characterological self-blame than non-depressed female college students, whereas behavioral self-blame did not differ between the two groups. Thus it may be that characterological self-blame is engaged in by depressives, and differentiates them from non-depressed individuals. In another study, Janoff-Bulman (1979) surveyed rape crisis centers in order to determine the nature of the self-blame engaged in by rape victims. It was found that rape victims blame themselves behaviorally for their rape, and do not combine this response with characterological self-blame. The author suggests that behavioral self-blame by victims of rape may be an adaptive response, for it represents an attempt to re-establish a belief in control over important life outcomes, particularly in the future avoidability of rape. Janis and Rodin (1979) more generally suggest that self-blame may be beneficial under conditions where the individual believes that he or she can do something about subsequently averting the kind of disaster just undergone.

In a recent discussion of the distinction between behavioral and characterological self-blame, Janoff-Bulman and Lang-Gunn (1980) suggested that the two types of self-blame have very different implications for victims' perceptions of their own vulnerability. Individuals who blame themselves behaviorally are more likely to regard their future as remaining largely within their own control, because they can believe that by altering their behavior in the future they will be able to avoid a recurrence of the victimization, and perhaps negative outcomes in

general. Those who blame themselves characterologically, however, are apt to focus on some personal deficiency which they regard as relatively non-modifiable and uncontrollable, and thus a possible recurrence of the misfortune is likely to be perceived as unavoidable. Therefore, individuals who blame their own behavior for a victimizing event are likely to be more successful at re-establishing a sense of invulnerability and safety than are those who blame their character and feel relatively helpless to alter the future course of events. As a reflection of their decreased sense of self-worth, the latter are more apt to begin to perceive themselves as chronic victims who deserved what happened to them in the past and deserve similar misfortune in the future.

The distinction between behavioral and characterological self-blame and its implications allow a further explication of the variables likely to mediate the relationship between causal attributions for and coping with victimization by breast cancer. To reiterate, the relationship between causal attributions and coping was hypothesized to be mediated by the victim's perception of her own invulnerability to cancer in the future. One method by which a breast cancer victim may recover her sense of invulnerability is to believe that she personally can avoid a recurrence of cancer through her own control. A belief in control over the avoidability of future cancer may be established by attributing the cause of one's cancer to controllable factors, such as one's behavior. Causal attributions to non-modifiable sources, such as one's character, may not establish feelings of control over the threat of recurrent cancer. Thus causal attributions to controllable sources may facilitate coping, for such attributions maximize the victim's perceived personal control over

the future avoidability of cancer, enabling her to feel relatively invulnerable. Since causal attributions to uncontrollable factors are less likely to enable victims to re-establish their sense of invulnerability, these attributions may be maladaptive in coping with breast cancer.

A second method by which a woman might recover her assumptions of invulnerability following the event of breast cancer would be for her to believe that her mastectomy was successful in ridding her of cancer. Causal attributions are likely to play as central a role in this second route to invulnerability as in the first. The extent to which a mastectomee believes that her operation was successful is again likely to be influenced by the perceived modifiability of the factors held responsible for causing her breast cancer. If a woman perceives the causes of her breast cancer to be non-modifiable or somehow permanent, she is apt to believe that her mastectomy was relatively unsuccessful in assuring that the cancer will not reoccur. If, however, a woman can believe that what caused her breast cancer is changeable and controllable, she may tend to believe that the cure provided by her mastectomy was a permanent one.

The extent to which a breast cancer victim believes her mastectomy was successful may well be affected not only by her attributions of causality, but also by the actual degree of serious illness, i.e., the stage at which her cancer was diagnosed and treated. Women whose cancer has spread to the axillary lymph nodes, resulting in the need for additional treatments, may feel more pessimistic about the success of their operation in removing all the cancer, and thus more vulnerable to a recurrence. Mastectomy patients whose cancer was confined to the breast,

often obviating the need for further therapies, are likely to feel less susceptible to cancer in the future since the chances are greater that their operation got all the cancer out. Therefore, breast cancer victims who have a more optimistic medical prognosis may cope better than those who have a bleaker outlook.

The major hypotheses of the present study may be summarized as follows:

1) Causal attributions for victimization by breast cancer will be associated with effective coping to the extent that they enable the victim to feel invulnerable to a recurrence of cancer in the future. To the extent that causal attributions do not enable a victim to feel invulnerable, they will be associated with maladaptive coping.

2) Assumptions of invulnerability may be re-established following the event of breast cancer through two primary and separate means. These are: believing that one can avoid a recurrence of cancer in the future through one's personal control, or believing that one's mastectomy was successful in removing all the cancer.

3) Both means of re-establishing feelings of invulnerability are influenced by the controllability of the factors believed by the victim to have caused her breast cancer. Attributions to controllable factors enable the breast cancer victim to believe that she has personal control over the avoidability of future cancer, or that her mastectomy was successful in ridding her of cancer. Attributions to uncontrollable factors do not enable the breast cancer victim to hold such beliefs.

In addition to examining psychological reactions to victimization on the part of breast cancer victims themselves, the present study

investigated psychological reactions on the part of husbands of breast cancer victims as well. The main purpose of questioning the husband of a breast cancer victim was to obtain an independent assessment of the effectiveness of his wife's coping responses. A second motive for questioning husbands was to attempt to gain some understanding of the role of social supports in arriving at causal attributions for uncontrollable, negative events.

C H A P T E R II

METHOD

Respondents

The respondents were 42 women who had undergone mastectomy as treatment for breast cancer. Two criteria were considered in selecting the sample. The first criterion required that the sample include only mastectomy patients whose cancer had not metastasized. The second criterion concerned length of time since surgery. Respondents were selected who had undergone mastectomy within two years prior to being interviewed.[2] Past research has indicated that it is not uncommon for some degree of emotional distress to persist for more than a year following mastectomy, and that coping with surgery, breast loss, and cancer may take as long as two years (see Meyerowitz, 1980; Quint, 1963; Silver and Wortman, 1980; Taylor and Levin, 1977). Furthermore, although most recurrences and metastases occur within two years post-mastectomy, a breast cancer victim is not considered cured until she has lived for at least 10 years free of disease (Kushner, 1975). Thus the sample was selected so that respondents were likely to be actively coping with the psychological after-effects of a breast cancer diagnosis. including the threat of future cancer.

Recruitment of Respondents

Respondents were recruited for the study by the following procedure. A letter was sent to 15 physicians (surgeons and internists) in western

Massachusetts whose medical practice included the treatment of breast cancer patients. The letter briefly explained the nature of the study, described the criteria by which the sample was to be selected, and requested the doctor's help in contacting mastectomy patients for possible participation. Each doctor was subsequently contacted by telephone, and asked whether he or she was willing to cooperate with the study. Of the 15 physicians who were sent letters, 12 (80%) agreed to cooperate.

Once the doctor had agreed to assist with the study, several methods were suggested by which the interviewer might obtain the names and telephone numbers of potential respondents, and the one preferred by the doctor was carried out. Four physicians simply provided the interviewer with a list of the names and telephone numbers of all breast cancer patients they had treated who fit the desired criteria. One doctor randomly selected mastectomy patients from all those who fit the restrictions imposed on the sample, and sent their names and phone numbers to the interviewer. The remaining seven physicians preferred to contact patients about the study themselves before giving the interviewer the names and numbers of potential respondents. These physicians requested women's permission to be telephoned about the study; they did not request that the women actually participate. Four physicians asked all those mastectomy patients who were eligible for the study and came to their office for a check-up for permission to be called. Three doctors randomly selected a group of eligible mastectomy patients, and called to inform them of the study.

Of the 40 women referred to the interviewer by physicians, 20 were

first told about the study by their doctors, while 20 first learned of it from the interviewer. Two more potential respondents were contacted by a Reach to Recovery volunteer. Finally, the names of two mastectomy patients were given to the interviewer by colleagues who knew of the study. The latter two women initially heard of the study through the interviewer.

The interviewer called each potential respondent to provide her with information about the study, and to request her participation. Each woman was told that the interviewer was interested in studying reactions to breast cancer and mastectomy, and was assured that if she agreed to an interview all of her responses would be kept confidential. If the woman agreed to participate in the study an interview was scheduled. Respondents were recruited over an eight month period.

Of the 22 women who had not been previously contacted by a physician or Reach to Recovery volunteer about the study, only one refused to be interviewed. All 22 women who had been made aware of the study before they were called by the interviewer agreed to participate; however, it was not possible to ascertain how many women had told their doctor or Reach to Recovery volunteer that they would prefer not to be called about the study. One woman who agreed to an interview on the telephone was not home at the time it was scheduled, and no attempt was made to reschedule the interview.

Procedure

Respondents were interviewed at their homes, with the exception of one woman who was interviewed in her office at work. In all cases, the

interviewer and the respondent were the only people present. When the interviewer arrived, she attempted to create a relaxed atmosphere by talking with the respondent for a few minutes before the interview began. The respondent signed a consent form which described the nature of the interview and insured the confidentiality of her responses.

Copies of all the stimulus materials are provided in the Appendix. Two questionnaires were completed by the respondents. The first requested background information, including: marital status; change in marital status since the mastectomy; sex and age of children; age, race, religion, and education of respondent and husband; work status and occupation at the time of mastectomy and presently; husband's occupation; and annual income.[3] The second questionnaire was the Beck Depression Inventory (Beck, 1967). (The Beck Depression Inventory is discussed in the section on coping measures.) Following the completion of the questionnaires, the interviewer brought up the question of using a tape recorder for the remainder of the interview. Of the 42 respondents, 37 agreed to be tape recorded, while 5 preferred that the interviewer take notes.

The interview began with a series of open-ended questions concerning various aspects of the woman's medical treatment for breast cancer. The respondent was asked how much time had elapsed between finding a breast cancer symptom and seeing a doctor about it, and between the first doctor's visit and her biopsy. Next it was determined whether the woman had undergone a one or two stage procedure. Those respondents who had undergone a two stage procedure were asked how much time went by between biopsy and mastectomy. All respondents were asked the date of their surgery, what kind of mastectomy they had, and whether their

mastectomy was on the same side as the hand they wrote with. The interviewer inquired whether the respondent had undergone additional therapies subsequent to mastectomy, and whether she was presently having treatments. Post-surgery complications were discussed if any had arisen. The woman was asked how long it had taken for her to resume her normal activities after hospitalization. Each respondent was asked whether she was considering reconstructive surgery.

Several questions were asked regarding the respondent's sources of social support and information about breast cancer and mastectomy. The interviewer inquired about any counseling the respondent might have received since the discovery of breast cancer, and asked whether a Reach to Recovery volunteer had come to visit. The woman was asked if she had known any family members or friends who had also had a mastectomy, before and after her own operation. The respondent was presented with a list of 10 sources from which she might have obtained information about breast cancer, and she checked each source she had actually utilized.

The interview then turned to the issue of causal attributions for the event of breast cancer. Two open-ended questions asked why women in general get breast cancer, and why the respondent in particular got breast cancer. On 11-point scales with endpoints labeled "not at all a cause" and "completely a cause," the woman was asked to note the extent to which she felt each of the following factors was a cause of her getting cancer: self, husband, other people, environment, and chance. Similarly, on 11-point scales with 1 equal to "not at all" and 11 equal to "completely," the respondent indicated the extent to which she thought she got cancer because of the kind of person she is physically, because of

the kind of personality she has, and because of her behaviors. In two separate questions the respondent indicated the extent to which she believed she could have avoided getting breast cancer, and the extent to which she believed she will be able to avoid a recurrence of cancer in the future. These two questions were answered on 11-point scales with endpoints "not at all" and "completely," and were followed by open-ended questions concerning what the woman might have done in the past, and what she will do in the future, to avoid cancer. On an 11-point scale anchored by "not at all successful" and "completely successful" the respondents indicated the extent to which they believed their mastectomy was successful in removing all the cancer. The extent to which the woman believed she will be free of cancer in the future was assessed on an 11-point scale with 1 labeled "not at all" and 11 labeled "completely." After each scaled item was completed, the respondent was asked why she had answered that question as she did.

The next series of open-ended questions was intended to get at the global changes in self- and world-view that are likely to result from victimization by breast cancer. The interviewer inquired whether the respondent had ever asked herself the question "Why me?" and, if so, how she had answered it. Any changes that might have occurred in the respondent's view of the world were discussed, as were the issues of personal vulnerability and the fairness of life events.

Coping Measures

The Beck Depression Inventory (Beck, 1967) was used as the primary measure of respondents' ability to cope with victimization by breast

cancer. The Beck Depression Inventory (BDI) contains 21 items, each of which describes a specific behavioral symptom of depression. Each item consists of a graded series of four or five self-evaluative statements. Each statement within each item is assigned a numerical value from 0 to 3, which reflects the degree of severity of the symptom. The value 0 represents a relative absence of depression, and 3 represents relatively severe depression. For each item, the respondent was asked to select the one statement which best described her feelings. The subject's responses were summed across all 21 items to yield a total depression score. This BDI score was used as an operational definition of coping. Lower scores reflected little depression and thus effective coping, while higher scores indicated greater degrees of depression and maladaptive coping.

Because of the difficulties involved in providing a clear conceptual definition of effective coping with victimization, researchers working in this area have suggested that it may be necessary to employ multiple measures of coping in order to obtain a valid indication of victims' psychological reactions (see Silver and Wortman, 1980). Therefore, in the present study three measures were utilized as operational definitions of coping in addition to the BDI. These coping measures concerned the respondents' emotional states, self-esteem, and levels of activity.

Both scaled and open-ended interview items were used to assess the respondents' emotional states. Respondents were asked to indicate the extent to which they experienced nine emotions immediately after their mastectomy, and the extent to which they were presently experiencing the same emotions, also with respect to their mastectomy. The list of

emotions was taken from a questionnaire by Epstein (Note 3) and was adapted to be appropriate to the situation under investigation. Included were the following emotions: angry-out; ashamed or embarrassed; displeased with self; happy or serene; optimistic or hopeful; powerful, strong, or in-control-of-events; proud, worthy, or pleased with self; sad, unhappy, or depressed; and scared, frightened, worried or anxious. On 11-point scales with endpoints labeled "not at all experienced" and "very strongly experienced," the respondents indicated the extent to which they had felt each emotion right after their operation. Similarly, on 11-point scales with endpoints "not at all experiencing" and "very strongly experiencing," the subjects noted the extent to which they were currently experiencing each emotion. The women were asked to explain each emotional response.

A coping measure called Emotions was constructed from the nine scaled items which assessed current emotions. The negative emotion items (angry-out, ashamed, displeased, sad, and scared) were reverse scored, and the Emotions score was calculated by summing the responses to all nine emotion items. A higher Emotions score indicated effective coping, in that it reflected a more positive emotional state.

The third coping measure involved respondents' self-esteem. On 11-point scales with poles labeled "extremely low" and "extremely high," the respondent rated the extent of her self-esteem both immediately after her mastectomy and presently. The woman's present self-esteem was used as an assessment of coping. High Self-esteem ratings indicated adaptive coping, while lower Self-esteem ratings represented poor coping.

Following the esteem items were questions relating to the respondent's

feminine and bodily self-image. In two separate questions the respondents were asked the extent to which their body, and the extent to which breasts in particular, are important for their self-image as a woman. Both of these questions were answered on 11-point scales, labeled "not at all" and "completely" at their endpoints.

The final coping measure consisted of a series of scaled items which evaluated the respondents' ability to perform activities as they did before treatment for breast cancer. The respondents indicated on 11-point scales the extent to which they had returned to their pre-operative level of functioning in the following areas: job, daily self-care activities, household tasks, leisure activities within the home, leisure activities outside of the home, sexual relations, and overall adequacy of functioning. The scales were labeled "much less" and "much more" at the endpoints and "same" at the midpoint. A coping score called Activities was obtained by summing over ratings on all seven activity scales. Effective coping was reflected in respondents' self-reports that they were active to the same extent (or to a greater extent) as they were before mastectomy.

Respondents were also questioned about their family and social relationships. If the respondent was married, she was asked how satisfied she was with her relationship with her husband as compared to before mastectomy. Similarly, if the woman had children she was asked how satisfied she was with her relationships with them. All respondents were asked the extent to which they were presently satisfied with their relationships with their friends. Answers to these three questions were given on 11-point scales, with 1 labeled "much less," 6 labeled "same,"

and 11 labeled "much more." In open-ended questions the interviewer inquired whether the respondent's relationships with her husband, children, and friends had changed since mastectomy, and if so, how they had changed.

Feedback

Upon completion of the interview, the interviewer explained that she was interested in how women cope with breast cancer, and more generally in how people cope with uncontrollable, negative events. Respondents were told that the interviewer was particularly interested in the relationship between people's causal attributions for such events and subsequent coping with the events. The interviewer asked for respondents' reactions to this issue, and a discussion usually ensued. Thus the feedback took the form of a dialogue between the interviewer and the respondent. The interviewer offered to send each respondent a summary of the final results of the study once it was completed. Interviews generally lasted about an hour and a half.

Husband Questionnaires

The interviewer asked each married respondent if she might leave a questionnaire for the husband to complete, along with a self-addressed, stamped envelope so that the questionnaire could be returned. Of the 32 married respondents, 9 (28%) said that their husband would not be interested in filling out the questionnaire, while 23 (72%) said they would give their husband the form. Of the 23 questionnaires left for husbands to fill out, 11 (48%) were returned. Respondents were asked

not to discuss the specific purpose of the study with their husbands until after the questionnaire had been completed.

The questionnaire completed by respondents' husbands was quite similar to the interview schedule for the respondents themselves. The first two questions were open-ended, and asked the husband to describe his wife's, and his own, general reactions to the diagnosis of breast cancer. The next two open-ended questions asked the husband why women in general get breast cancer, and why his wife in particular got breast cancer.

The husband completed a series of questions concerning his causal attributions for his wife's breast cancer. On 11-point scales with endpoints labeled "not at all a cause" and "completely a cause," the husband indicated the extent to which he felt each of the following factors was a cause of his wife getting cancer: self, wife, other people, environment, and chance. The husband noted the extent to which he thought his wife got cancer because of her physical make-up, her personality, and her behaviors, on 11-point scales labeled "not at all" and "completely" at the endpoints. Following each scaled item, the husband was asked to explain the rating he had made.

The next set of questions involved the husband's perceptions of the avoidability of his wife's cancer in the past and future. Specifically, the husband indicated the extent to which he believed that: his wife could have avoided getting breast cancer, he could have helped his wife avoid getting breast cancer, his wife will be able to avoid a recurrence of cancer, and he will be able to help his wife avoid a recurrence. These questions were answered on 11-point scales with poles labeled "not

at all" and "completely." In open-ended questions the husband was asked how he or his wife could have avoided her getting breast cancer, and how they might avoid her getting cancer in the future. On 11-point scales with endpoints "not at all" and "completely," the husband indicated the extent to which he believed his wife's mastectomy was successful in removing all the cancer, and the extent to which he believed his wife will be free of cancer in the future. An explanation of each rating was requested.

The husband responded to open-ended questions relating to his need to find meaning in his wife's victimization. One question determined if he had ever asked himself the question "Why her?" and, if so, what answer he had reached. The husband was asked whether any changes had occurred in his world-view, or in his assumptions about his own vulnerability and the fairness of outcomes.

The questionnaire contained a set of scaled items regarding the husband's emotions, and the husband's perceptions of his wife's emotions. The husbands were questioned about the same nine emotions that the respondents themselves had been asked about. The husband indicated the extent to which he, and the extent to which his wife, had experienced each emotion immediately following her mastectomy. He also noted the extent to which he and his wife were currently experiencing each emotion with respect to his wife's mastectomy. These ratings were made on 11-point scales anchored by "not at all experienced (experiencing)" and "very strongly experienced (experiencing)." A measure of the wife's coping as perceived by the husband was calculated from the nine ratings of the wife's current emotions. The negative emotion items were reverse

scored, and the husband's responses were summed over all nine ratings. The summed score obtained is referred to as Wife's Emotions.

The husband was questioned about his wife's self-esteem. On 11-point scales with poles labeled "extremely low" and "extremely high," the husband rated the extent of his wife's self-esteem immediately after her mastectomy and presently. The rating of present self-esteem is referred to as Wife's Self-Esteem. The husband was also questioned about the significance of breasts to himself and to his wife. He noted the extent to which breasts are important to his wife's feminine self-image, and the extent to which breasts are important to his image of womanhood, on two 11-point scales with endpoints labeled "not at all" and "completely."

The husband was asked to evaluate his wife's ability to perform activities as she did previous to mastectomy. He rated the extent to which his wife had returned to her pre-operative level of functioning in the same seven areas provided for the respondents, on the same type of scales. Responses to the seven activity items were summed, to obtain a measure of the husband's perceptions of his wife's activity level. This measure is referred to as Wife's Activities.

Included in the questionnaire were inquiries into the husband's and wife's relationships. The husband indicated the extent to which he and his wife were each satisfied with their relationship with each other, their relationships with their children, and their relationships with their friends, relative to before his wife's mastectomy. Answers to these questions were given on 11-point scales, with the endpoints labeled "much less" and "much more" and the midpoint labeled "same."

The husbands were asked to describe any changes that might have occurred in these relationships.

CHAPTER III

RESULTS

Description of Respondents

Background variables. Of the 42 respondents, 32 (76%) were married, and 10 (24%) were widowed, divorced, or single. All respondents reported that their marital status had not changed since mastectomy. Thirty-three (79%) of the respondents had at least one child; however, only 14 (33%) of the respondents had children who were under the age of 18. Respondents ranged in age from 23 to 81 years old; mean age was 53.4.[4] Whites comprised 95% of the sample (40 respondents), and blacks 5% (2 respondents). According to self-reports, 25 (60%) of the respondents were Protestant, 13 (31%) were Catholic, 3 (7%) were Jewish, and 1 (2%) was "nothing." Regarding education, 7 (17%) of the respondents had less than a high school education, 15 (36%) had completed high school but had no further schooling, 9 (21%) had some college training, 4 (10%) had not pursued their education beyond graduation from college, and 6 (14%) had a graduate degree. One respondent failed to indicate the last year of school she had completed.

Nineteen respondents (45%) were working at the time of their mastectomy, while 23 (55%) were retired, temporarily unemployed, or had never worked. Of the 19 respondents who were working at the time of their operation, 4 were domestic or factory workers, 5 performed clerical work, 4 worked in stores or restaurants, 4 were involved in human

services, and 1 was a professional. One respondent did not report her occupation. Fifteen of the 19 employed respondents had returned to work by the time they were interviewed. No respondent who was unemployed prior to her mastectomy had started a new job. Only 3 respondents (7%) reported that their family's annual income was $10,000 or less; 13 (31%) of the respondents had an income between $10,000 and $20,000; while 13 had an income of more than $20,000. Thirteen respondents did not know, or preferred not to reveal, the amount of their annual income.

Medical treatment variables. The discovery of a breast cancer symptom was made by respondents themselves in 83.3% of the cases (35 respondents), and by doctors in routine medical examinations in 14.3% of the cases (6 respondents). This information was missing for one respondent due to a malfunction of the tape recorder. Thirty-three respondents were able to state how much time had elapsed between their discovery of a breast cancer symptom, and their first visit to a doctor about it. Six respondents saw a doctor within 24 hours; 10 waited more than a day but went to their doctor within a week; 7 sought a doctor's advice more than one week but within one month after finding a breast irregularity; 5 presented themselves to a physician more than one month but within three months after discovering a symptom of breast cancer; 2 waited more than three months but saw their doctor within 6 months; and 3 did not see a doctor for more than six months to a year after detecting a breast abnormality. Because the onset of symptoms was ambiguous for 2 respondents, these women were unable to state how long they had been aware of a breast cancer symptom before they went to the doctor.

Twenty-eight respondents (66.7%) were informed at the first doctor's visit that their symptoms were definitely suspicious, and a biopsy in consultation with a surgeon was suggested. Nine respondents (21.4%) were told that their symptoms were probably nothing to worry about, and thus did not have a biopsy for some time. The remaining 5 respondents were unable to relate the exact sequence of events regarding their first visit to the doctor and to the surgeon, and their biopsy.

The respondents were interviewed 1 to 20 months post-mastectomy; the mean number of months since mastectomy was 8.9. Two stage procedures were undergone by 31 (74%) of the respondents, while 11 (26%) had a one stage procedure. Regarding kind of mastectomy, 1 respondent (2%) had a partial mastectomy, 37 (88%) had modified radicals, and 2 (5%) had radicals.[5] Two respondents had two mastectomies; in both cases one mastectomy was a radical and the other a modified radical. The mastectomy of 17 respondents (40%) was on the same side as the hand they wrote with (in all cases the right side), whereas 23 (55%) of the respondents had their mastectomy on the opposite side. As stated, 2 respondents (5%) had a mastectomy on both sides. Post-surgery complications were experienced by 11 (26%) of the respondents.

It was determined that of the 42 respondents, 20 (48%) had additional therapies subsequent to mastectomy. Of the 20 respondents, 7 had radiation therapy, 10 had chemotherapy, 2 had both radiation and chemotherapy treatments, and 1 was on hormone therapy. Furthermore, 2 other respondents were scheduled for additional surgery at the time they were interviewed; one was to have a radium implant, and the second was preparing for prophylactic surgery on the remaining breast. Twelve (29%)

of the respondents were undergoing additional treatments at the time they were interviewed. One was having short-term radiation therapy, 10 were having long-term chemotherapy, and 1 was continuing hormone therapy. Whether cancer had spread to axillary lymph nodes was spontaneously mentioned by 36 respondents. Of these 36 women, 22 reported no lymph node involvement, and 14 stated that some lymph nodes had been found to be cancerous.

Respondents reported how long it had taken for them to resume their normal activities after being discharged from the hospital. Seven respondents (16.7%) said they had resumed their normal activities within 24 hours of being discharged; 9 (21.4%) took about a week to get back to normal; 14 (33%) had taken about a month; 8 (19%) waited about three months to resume normal functioning; 2 (4.8%) resumed activities about six months later; and 1 (2.4%) took a full year. One respondent who was interviewed three months post-mastectomy had not yet returned to her normal activities. Concerning reconstructive surgery, 28 (67%) of the respondents stated that they would never consider breast reconstruction; 6 (14%) were considering it as a possibility; 6 (14%) said they were definitely planning to have the surgery; and 2 (5%) had already undergone breast reconstruction.

Social and information variables. Since their discovery of breast cancer, 14 (33%) of the respondents had received some form of counseling from ministers, family physicians, or hospital staff. All 14 respondents stated that the counseling they had received was helpful. Reach to Recovery volunteers visited 30 (71%) of the respondents. Of the 30

respondents who saw a Reach to Recovery volunteer, 20 said the visit had been helpful, 6 felt that the visit had been pleasant but not particularly helpful, and 4 stated that they had not benefited from the visit in any way. Thirty-one respondents (74%) were unaware of any history of breast cancer in their family. Before mastectomy, 22 (52%) of the respondents knew a relative or friend they could talk to who had also had the operation. After mastectomy, however, 37 respondents (88%) knew a mastectomee they could talk with about the surgery and its after-effects. Regarding sources of information about breast cancer, the mean number of sources utilized by respondents was 3.6. Table 1 contains the list of 10 sources presented to respondents, and the percentage of respondents who utilized each source.

Description of Husbands

Background variables. The 11 husbands who completed questionnaires ranged in age from 39 to 74 years old; mean age was 53.3. All of the husbands in the sample were white. Of the 11 husbands, 6 were Protestant, 4 were Catholic, and 1 was "nothing." Regarding education, 4 of the husbands had less than a high school education, 1 had completed high school but had no further education, 3 had some college training, and 3 had a college degree. Two of the husbands were retired; the other 9 men were employed. Of these, 2 were skilled laborers, 3 were involved in sales, 2 ran their own businesses, and 2 worked in human services.

Responses to Scaled Interview Items

Table 2 reports the means and standard deviations for the scaled

Table 1

Percentage of Respondents Utilizing Sources of Information about Breast Cancer

Source	%	n
Doctor	74	31
Other hospital staff	19	8
Relatives	24	10
Friends	26	11
Magazines	64	27
Newspapers	33	14
Books	29	12
Television	36	15
Radio	2	1
Reach to Recovery	31	13

Table 2

Means and Standard Deviations for Interview Items Concerning Causal Attributions, Avoidability of Cancer, Success of Mastectomy, and Invulnerability

Interview Item	M	SD
To what extent do you feel each of the following factors was a cause of your getting cancer?		
Self	2.475	2.572
Husband	1.094	.390
Other people	1.571	1.713
Environment	2.800	2.719
Chance	5.513	3.583
(1=not at all a cause, 11= completely a cause)		
To what extent do you think you got cancer a) because of the kind of person you are physically, that is, because of biological or constitutional factors?	4.842	3.606
b) because of the kind of personality you have, that is, because of some character trait(s) you have?	2.122	2.421
c) because of something you did, that is, because of some behavior(s) you engaged in or failed to engage in?	2.146	2.825
(1=not at all, 11=completely)		
To what extent do you believe that you could have avoided getting breast cancer? (1= not at all, 11=completely)	2.537	2.749
To what extent do you think the mastectomy was successful in removing all the cancer? (1=not at all successful, 11= completely successful)	9.790	2.195
To what extent do you believe you'll be free of cancer in the future? (1=not at all, 11=completely)	7.417	3.046
To what extent do you believe you will be able to avoid a recurrence of cancer in the future? (1=not at all, 11=completely)	4.878	4.202

interview items concerning causal attributions, perceived avoidability of past and future cancer, success of mastectomy, and invulnerability to recurrence. The respondents were asked to explain why they answered each of these scaled items as they did. Their explanations are presented below.

Attribution to self. Of the 42 respondents, 13 (31%) felt that they had caused their breast cancer to some extent. For this group of 13 respondents, the mean rating of the extent to which self was a cause was 5.5. The most frequent explanation given by the respondents as to why they felt they were a cause of their getting cancer was that they had difficulty in dealing with stress. Other explanations provided by respondents included the fact that they had taken hormones, or that they had injured their breast in some way. Also mentioned as explanations were: "something I ate," failing to have breastfed children, and having been sexually active at a young age.

Those respondents who felt that they had played no role in causing their breast cancer explained their response in one of three ways. Some women felt that their breast cancer had been caused by hereditary or physical factors for which they were not responsible. A second group of respondents explained that they had led a generally healthy lifestyle, and had always taken good care of themselves. The third group felt that their breast cancer was something that "just happened." They explained that the cause of breast cancer is unknown to anyone, and therefore was not under their own control.

Attribution to husband. Only 5% of the total sample (2 respondents;

6% of all married respondents) felt that their husband was a cause of their getting cancer. One of these respondents rated the extent to which her husband was a cause as 2, and explained that she occasionally felt stressed by her husband's casual attitude. The other respondent, who gave this item a rating of 3, said that her husband was the reason she had taken birth control pills, which in turn had contributed to her getting breast cancer. For those respondents who felt that their husband was not at all a cause of their getting cancer, the typical explanation was simply, "I don't think he had anything to do with it." However, some women specifically mentioned that their sexual relations had not been a cause, that their husband did not have the difficulty they did in handling stress, or that their husband came from a healthy family.

Attribution to other people. Of the sample, 5 respondents (12%) felt that other people were at least partially a cause of their getting cancer. The mean rating of the extent to which other people were a cause was 5.4 for this group of 5 respondents. Four of the 5 women explained that they had inherited the disease from their family, or that they had inherited a genetic predisposition for cancer. The other respondent said that she blamed her doctor for failing to have diagnosed her breast cancer at an earlier stage. The most common explanation for feeling that other people were definitely not a cause of getting cancer was a statement such as, "I don't know how possibly they could have caused it." Some respondents who did not feel that other people were a cause mentioned that their breast cancer was something

that "just came on me," so that others should not be held responsible for it.

Attribution to environment. Eighteen of the 42 respondents (43%) indicated that the environment was a cause of their getting cancer, in part or completely. These 18 respondents gave a mean rating of 5.0 for the extent to which the environment was a cause. The primary environmental factor believed by the respondents to have caused their breast cancer was pollution of the air and water. Other environmental causes provided by the respondents included unhealthy food, taking birth control pills, stress, and poor working conditions. Most of the respondents who did not feel that the environment was a cause of their getting cancer explained that they had always lived in healthy surroundings, such as rural settings rather than cities. Some women felt that since they lived in the same type of environment and ate the same kind of diet as other people who have not gotten cancer, environmental factors could not be viewed as a cause. Still others attributed the cause of their breast cancer solely to physical factors. Finally, several respondents stated that because they did not know exactly why they got breast cancer, they could not say that the environment was a cause.

Attribution to chance. Sixty-nine percent of the sample (29 respondents) felt that chance was completely or in part a cause of their getting cancer. For the 29 respondents, the mean rating of the extent to which chance was a cause was 7.0. The majority of explanations provided by respondents as to why chance was a cause of breast cancer fell into two categories. The first category consisted of explanations that getting

breast cancer is a matter of fate; breast cancer is an event that is uncontrollable and "just happens." The second category of explanations included respondents who attributed the cause of their cancer to chance because they could not find any other reason for having gotten it, such as hereditary, environmental, or hormonal influences. Several respondents felt that chance was a cause due to the fact that a certain number of women get breast cancer, and they just happened to be one of those women. Similarly, several respondents who believed that they had inherited cancer from their family felt that chance determined which family members actually got cancer. Respondents who did not make a causal attribution to chance usually attributed their cancer to one particular cause, such as hereditary, hormonal, environmental, or dietary factors. Alternatively, these respondents explained that although they did not yet know the cause of their getting cancer, at some time in the future the cause will be discovered by cancer researchers.

Attribution to physical factors. Of the 42 respondents, 26 (62%) thought that they got cancer in part or completely because of the kind of person they were physically. The mean rating of the extent to which physical factors were a cause was 6.5 for this group of 26 respondents. In explaining why they thought physical factors were a cause of their getting cancer, most of the respondents said that something in their biological, chemical, or cell make-up must have gone awry. Typical of these explanations were statements such as: "It has to be biological--some flaw in your own chemistry," "There's something in your own system that does it," and "Something just went haywire." Another group of

respondents thought that heredity was responsible for causing their cancer. Finally, two respondents explained that women such as themselves who are overweight and large breasted are "more prone to cancer." Those respondents who did not think that physical factors were a contributory cause of their cancer explained that throughout their lives they had been healthy people who rarely came down with even minor illnesses. Also mentioned in explanation by women who did not attribute the cause of breast cancer to their physical self was the fact that no family members had ever had cancer, or that they had always taken good care of themselves by having regular medical examinations.

Attribution to personality. Of the sample, 10 respondents (24%) thought that they got cancer because of the kind of personality they had. For this group of 10 respondents, the mean rating of the extent to which personality was a cause of their getting cancer was 5.6. All but one of the 10 respondents who attributed the cause of their cancer to their personality explained this attribution by saying that they were easily stressed, and described themselves as being aggressive, "a worrier," emotionally high-strung, or unable "to cope with situations." The other respondent who thought that her personality had contributed to her getting breast cancer believed that the reason she got cancer was that God knew she was the kind of person who was capable of handling it.

The explanations of those respondents who did not think that their character caused their cancer to any extent were represented by the explanation of one woman who said, "I don't see the connection--I can't

believe that personality has anything to do with it." Several women explained that they did not easily get upset by stressful situations, and described themselves as "easy-going" or "reasonable with everyone." Some respondents specifically pointed out that they had not interpreted their breast cancer as deserved punishment for the kind of personality they had, because they were generally "good" people. Finally, two women did not attribute the cause of their cancer to their "nervousness," because they felt that "stress is just a theory," and has not been proven to cause cancer.

Attribution to behavior. Seven of the 42 respondents (17%) thought that something they had done caused their cancer to at least some extent. These 7 respondents gave a mean response of 7.7 for the extent to which they had gotten cancer because of their behaviors. The behaviors the respondents referred to when explaining their response included: accidentally injuring the breast, taking hormones, having dental x-rays, and eating the wrong foods. Many of the respondents who indicated that their behaviors had not caused their cancer said that faulting their actions would be equivalent to believing that breast cancer was a punishment by God for something they did. For example, one woman said, "That would be that punishment theory and I just don't believe it."

Avoidability of breast cancer. Thirty-three percent of the sample (14 respondents) believed that they could have avoided getting breast cancer to some extent. The mean response for the perceived avoidability of breast cancer was 5.5 for this group of 14 respondents. Every respondent was asked if she thought there was anything she could have

done to avoid getting breast cancer, and if so, what she might have done. Those women who felt that they could have avoided getting breast cancer responded to the latter question in a variety of ways. The most frequent answer given by the respondents was that they should not have taken hormones. Several respondents also remarked that they should have learned how to deal with stress in a more effective way, that they should have seen a physician more often, or that they could have lived in healthier surroundings. Also mentioned were the ideas that breast cancer could have been avoided by better nutrition, practicing breast self-examination, or by breastfeeding rather than bottle-feeding children. One woman felt that she could have avoided injuring her breast, and thereby prevented cancer.

Those respondents who believed that their breast cancer was unavoidable said there was nothing they could have done differently, either because breast cancer is "strictly biological," or because breast cancer is something that "just happens." Several women stated that they had always taken good care of themselves by going to the doctor frequently, avoiding unhealthy environments, or wearing proper undergarments. Finally, some respondents said that if they had known how to avoid breast cancer they certainly would have, but "you can't avoid it if you don't know the reason for getting it."

Success of mastectomy. When the respondents were asked to indicate the extent to which they thought their mastectomy was successful in removing all the cancer, only 2 women (5%) responded to this item with a rating lower than 7. One of these 2 respondents rated the extent to

which her mastectomy was successful as "not at all," and explained that because she had been found to have cancerous lymph nodes, the doctors could not possibly have removed all the cancer. The second respondent, who also had lymph node involvement, indicated that she thought her operation was relatively unsuccessful by rating this item a 3, and explained her response by saying:

> You never really believe after you've had it that it is completely gone. I really don't feel that I will ever think that there is no more cancer in my body, even though I've had chemotherapy. When I have an ache or a pain I will always first think of that. Because I feel that it's removed from my lymph glands, and of course the breast is gone, and I still question whether it's in some other part of my body.

Those respondents who thought that their mastectomy was relatively successful in removing all the cancer often supported their belief by reporting that the cancer had not spread to the axillary lymph nodes, so that no additional therapies had been required. Many of these respondents also said that their surgeon had assured them that the operation was a success. The respondents further explained that they were feeling well in general, that they could use their arm as they had before surgery, and that so far there had been no signs of recurrent cancer. Those women who thought that their mastectomy had been relatively successful in removing all the cancer, even though they had undergone additional therapies, explained that they felt confident that the therapies in combination with surgery would be effective in preventing a recurrence of cancer.

Free of cancer in the future. Each respondent was asked to indicate the extent to which she believed she will be free of cancer in the

future. Fifteen respondents (36%) rated the extent to which they held this belief as 6 or less. Some of these respondents explained the rating they had made by saying that most of the cancer victims they knew had suffered a recurrence of cancer. One woman said, for example, "People that had it, even if they're cured for a while, eventually that's what they die of." However, the possibility of recurrence was generally viewed by these respondents not as an event that might occur in the immediate future, but as an event that would come about if they "live long enough and don't die of something else first." For instance, one woman said, "With all the cancer there is today, if I live another 10, 20 years I might get cancer in another part of my body that may have nothing to do with breast cancer." Other respondents who indicated that the likelihood was relatively small of remaining free of cancer explained their response by referring to statistical information they had regarding the rate of recurrence in breast cancer victims. These women expressed beliefs such as: "There's a 1 in 15 chance that if you've had one breast cancer you'll have another," or "There's a 50-50 chance of developing one in the other breast." Two respondents said that because their cancer had spread to the lymph nodes, they would probably suffer a recurrence of cancer in another part of the body.

Those respondents who felt relatively invulnerable to cancer in the future most often explained their response by expressing the faith that their past and future medical care would be sufficient to prevent a recurrence. Other women stated that their response was based on their knowledge of the survival rates of mastectomy patients. Feelings of relative invulnerability to future cancer also stemmed, for some respondents,

from the belief that they could take actions to prevent cancer, such as not smoking cigarettes, and learning to deal with stressful situations in a more effective manner. Similarly, several respondents mentioned that if they could "think positive" and feel hopeful, this "mind set" would help them to remain free of cancer in the future.

Avoidability of recurrence. Of the 42 respondents, 22 (52%) believed that they will be able to avoid a recurrence of cancer in the future, in part or completely. The mean rating of the perceived avoidability of recurrence was 8.2 for this group of 22 respondents. Each respondent was asked if she thought there was anything she could do to avoid a recurrence of cancer, and if so, to explain what she could do. The most frequent explanation provided by the respondents who believed that a recurrence would be avoidable was that they would continue to receive proper medical care. Some respondents who were undergoing chemotherapy treatments felt that having such treatments would prevent a recurrence. Another common response to the question of what might be done to avoid cancer in the future was that constant vigilance to any signs or symptoms of cancer, and seeking prompt medical attention upon the discovery of any symptoms, would enable the respondents to remain cancer-free. The respondents who perceived future cancer as avoidable also mentioned a variety of behaviors they could engage in that would make cancer a less likely event. These behaviors included: learning to cope with stress, not smoking cigarettes, eating a healthy diet (in particular, not eating meat), preventing injury to the breast, not taking hormones, and avoiding polluted environments. Several respondents said that positive

thinking, and maintaining a positive outlook on the future, were important factors in avoiding a recurrence of cancer.

Those respondents who did not believe that they could avoid a recurrence of cancer to any extent explained their belief in one of two ways. Some of these respondents said that since getting breast cancer in the first place was a matter of fate, they would have no control over avoiding a recurrence. Common were statements such as: "It's not up to me," "If it's going to happen it will happen," or "These things come--you don't have any control over them." A second group of respondents gave explanations such as: "When we don't know why we got it, how can we avoid it--if we knew the reason we would stay away from it" and "I can't change something that I didn't even know started it." In other words, these women felt that until they had determined the cause of their breast cancer, it would be impossible for them to take actions to avoid a recurrence of cancer. Several women expressed the hope that scientists will soon discover a type of vaccine for cancer that will prevent its occurrence. For example, one woman said, "If something comes out that I could take that would help, I'd take it."

Emotional responses. The means and standard deviations for the scaled interview items concerning emotions are presented in Table 3. Following the completion of each scaled item, the respondents were asked to explain what they were reacting to if they had experienced the particular emotion in question. The subjects' responses to these open-ended questions are presented in the sections that follow.

Table 3

Means and Standard Deviations for Interview Items Concerning Emotions

	Interview Item			
	To what extent did you experience each of the following emotions immediately following your mastectomy? (1= not at all experienced, 11=very strongly experienced)		To what extent are you experiencing each of the same emotions at this stage in time, also with respect to your mastectomy? (1=not at all experiencing, 11=very strongly experiencing)	
Emotion	M	SD	M	SD
Angry-out: angry or disgusted with someone or something (not yourself)	2.805	3.242	1.293	.901
Ashamed or embarrassed	2.366	3.137	1.244	.916
Displeased with self: guilty, angry at, or disgusted with yourself	1.951	2.500	1.756	1.868
Happy or serene	6.400	3.828	8.732	2.793
Optimistic or hopeful	8.634	2.709	9.220	2.351
Powerful, strong, or in-control-of-events	7.051	3.634	9.125	2.633
Proud, worthy, or pleased with self	7.947	3.255	8.769	2.870
Sad, unhappy, or depressed	3.195	3.273	2.634	2.922
Scared, frightened, worried, or anxious	5.476	4.186	2.738	2.688

Angry-out. Of the 42 respondents, 13 (31%) rated the extent to which they had experienced anger immediately after their mastectomy greater than "not at all." For these 13 respondents, the mean rating of the extent to which they had felt angry was 6.7. Several of these respondents explained that they had experienced anger in reaction to the cancer itself, the fact that "it had happened to me," and the threat of a shortened lifespan. Other respondents were angry at a particular person, such as a physician who had misdiagnosed their breast cancer symptoms as innocuous, hospital staff who had been insensitive, or an unsupportive husband or friend. Anger was experienced by some respondents in reaction to the belief that it was unfair that "good" people like themselves should get cancer, because only "bad" people deserve to have the disease. For example, one woman said:

> I've never smoked, I don't drink, I don't do these things. I think I was angry to think that here I am, I don't do any of these things to warrant my getting cancer. That's what made me angry. But now I can see it happens to everybody, and it happens to a lot of people no matter what they're doing or what they're not doing. Some people can be alcoholics and run around and do all these things and never get sick, and maybe that's what--I was just angry at the world I guess in general. Angry at the word cancer probably would be more like it.

One respondent explained, "I did feel anger when I would see the scar. I would feel as--furious. I wanted to yell and scream."

Six respondents (14%) indicated that they were feeling angry at the time they were interviewed, by rating this item as 2 or greater. The mean rating of the extent to which they were experiencing anger was 3.0 for this group of 6 respondents. These women explained that they were reacting to insensitivity on the part of other people; in particular,

people involved in their medical treatment. Two women felt angered by the scar left by surgery, because it limited their choice of clothing.

Ashamed or embarrassed. Nine of the 42 respondents (21%) stated that they had experienced the emotions of shame or embarrassment right after their mastectomy. The 9 respondents who rated the extent to which they had felt ashamed or embarrassed greater than "not at all" gave a mean response of 7.2. Most of these 9 respondents had been concerned about "the way the operation looked," and how their husband or sexual partner would react to their loss of a breast. For example, one respondent explained her feelings of embarrassment in the following way:

> I was at first, especially with my husband. Even to this day--...I don't think my husband's ever seen my surgery. It's just something that--that's women's work. That's just something I just--I won't show him.

Several respondents also commented that they had felt embarrassed immediately following their mastectomy, because they had been unable to wear a prosthesis for several days or weeks.

Only 4 respondents (10%) indicated that they presently were feeling ashamed or embarrassed; the mean response to this item was 3.5 for the 4 respondents. These respondents explained that they experienced shame or embarrassment when they were undressed, and particularly when they were undressed in front of strangers, such as in a locker room. One respondent also mentioned that she was likely to feel embarrassed when her prosthesis would slip out of its proper place.

Displeased with self. Nineteen percent of the sample (8 respondents) said that they had felt displeased with themselves in some respect

immediately following their mastectomy. These 8 respondents gave a mean rating of 5.9 for the extent to which they had felt displeased right after their operation. Several respondents explained that they had felt displeased in reaction to their physical appearance, and the fact that their scar did not allow them to wear certain kinds of clothes. Two women suggested that they had felt disgusted with themselves in an overall sense by saying: "I had so many problems" and "I couldn't do anything right." One respondent was angry with herself for having taken birth control pills, which she believed had caused her breast cancer. Finally, one other respondent explained that she had felt disgusted right after her mastectomy because she had been unable to use her arm as she had prior to surgery.

At the time they were intereviewed, 9 respondents (21%) noted that they were presently feeling displeased with respect to their mastectomy, and provided a mean response of 4.4. Some respondents explained that they were concerned about the changes in their physical appearance, as they had been right after their operation. Similarly, the feelings of the respondent who had taken birth control pills had not changed. Two respondents were displeased about the side-effects of chemotherapy, because they found it difficult to undertake household and social activities. One respondent stated that she was feeling displeased with herself because she was "always expecting something bad."

Happy or serene. All but 9 of the 42 respondents (79%) reported that they had felt happy or serene immediately after their mastectomy. The 33 respondents who rated the extent to which they had experienced

happiness or serenity greater than "not at all" gave a mean rating of 7.5. The majority of respondents explained that they had experienced these emotions in reaction to the fact that the surgery was over, and that their lives could return to normal. Some respondents stated that they had felt happy when they were told that the cancer had not spread to the lymph nodes, so that additional therapies would not be necessary. The respondents frequently suggested that the reassurance of their surgeon and other members of the hospital staff had helped them to maintain a positive outlook. Similarly, some women mentioned that the support and concern of their family and friends had kept them from feeling depressed.

Thirty-nine respondents (93%) indicated that they were experiencing the emotions of happiness or serenity at the time they were interviewed; the mean response given by this group was 9.2. Most of the respondents explained that they were feeling happy at the present time because their experience with breast cancer was over. They were happy to be "alive and feeling well" and living a normal life as they had before surgery. Some women expressed the view that they were happy because "it could have been worse." They explained that breast cancer is a type of cancer that is relatively easy to detect and treat. Several respondents further explained that their happiness stemmed from the fact that they had not had lymph node involvement or any post-surgery complications, and that so far there had been no signs of recurrent cancer. Two of the respondents said that they were happy about having reconstructive surgery. Finally, two women explained that they were trying to remain happy for the benefit of their family.

Optimistic or hopeful. All but 1 of the 42 respondents (98%) stated that they had felt optimistic or hopeful immediately following their mastectomy. The 41 respondents gave a mean rating of 8.6 for the extent to which they had felt optimistic or hopeful. The respondents' reasons for feeling optimistic or hopeful fell into three categories. Some respondents said they had experienced optimism in reaction to their surgeon's reassurance that the mastectomy had been successful, as well as their lack of lymph node involvement and need for additional treatments. A second group of respondents explained that they had simply felt that "everything had been taken care of" so that "everything was fine." The third group of respondents stated that the calm but concerned attitude of the hospital staff and of their friends and family had enabled them to maintain an optimistic and hopeful outlook on the future.

All of the respondents reported feeling at least somewhat optimistic or hopeful at the time they were intereviewed. The mean response is provided in Table 3. The respondents explained that they were experiencing these emotions in reaction to the same factors that had caused them to feel optimistic or hopeful immediately after their mastectomy. However, some women added that they were feeling optimistic and hopeful because they had not suffered a recurrence of cancer. Several respondents explained that they were currently feeling optimistic because they had undergone, or were planning to undergo, breast reconstruction.

Powerful, strong, or in-control-of-events. Thirty-five of the 42

respondents (83%) said that they had felt powerful, strong, or in control right after their mastectomy; the mean response was 7.7 for this group. Most of the 35 subjects who rated the extent to which they had felt powerful greater than "not at all" explained this response by saying that they had felt in control of their emotions. Some respondents explained that they had felt in control of events, because they had participated in the decision-making concerning their medical treatment. Other respondents stated that the help of their doctor and family had enabled them to retain their feelings of control. Finally, several respondents remarked that because they had been up and around while they were still in the hospital they had never lost their sense of control.

Of the 42 respondents, 38 (90%) indicated that they were presently feeling powerful, strong, or in-control-of-events. These 38 respondents provided a mean response of 9.6. They explained that they had regained control of daily events, and that their mastectomy had not prevented them from resuming their normal way of life. Several women specifically commented that their feelings of control were a result of the fact that they had returned to work shortly after their hospitalization.

Proud, worthy or pleased with self. Of the sample, 34 respondents (81%) noted that they had felt proud, worthy, or pleased with themselves immediately after their operation. These 34 respondents gave a mean rating of 8.8, and experienced pride in reaction to three factors. One group of respondents explained that their feelings of pride had been a result of the support, compliments, and encouragement they had received

from their physician, hospital care-takers, friends, and family. A second group of respondents was pleased that they had gotten through the mastectomy with a minimal amount of physical disability. The third group of respondents was proud that they had not revealed their negative emotions surrounding the mastectomy to their family, and in particular to their children.

Thirty-eight (90%) of the respondents stated that they were feeling proud, worthy, or pleased at the time they were interviewed. For the 38 respondents, the mean response to this item was 8.9. Many of the respondents explained that they were reacting to the same factors which had fostered their feelings of pride immediately following their mastectomy. In particular, the respondents said that they felt pleased with themselves because of the support they had received from others, or because their surgery had not resulted in significant physical disability. Several respondents commented that they were currently feeling proud and pleased because they had achieved an inner peace with respect to their experience with cancer. For instance, these respondents were proud that they had "met up to it," or "come to terms with it."

Sad, unhappy, or depressed. Forty-three percent of the sample (18 respondents) rated the extent to which they had felt sad, unhappy, or depressed immediately following surgery as 2 or greater; their mean response was 6.0. Several respondents experienced these emotions in response to their loss of a breast and their bodily appearance. For example, one women expressed the feeling that she was "less than whole." Several other respondents explained that they had been unhappy

about the physical restrictions resulting from their operation, particularly their limited arm use. Finally, several respondents said that their feelings of sadness and depression were due to their fears that the cancer might reoccur in the future.

Sixteen respondents (38%) noted that they were sad, unhappy, or depressed with respect to their mastectomy, at the time they were interviewed. The mean rating was 5.2 for these 16 respondents. Most of the respondents explained that they were reacting to the same factors which had caused their depression immediately following mastectomy, except that now their feelings of sadness were less intense and occurred less often. However, two women mentioned that presently they were often depressed by the physical side-effects of having chemotherapy treatments.

Scared, frightened, worried, or anxious. Of the 42 respondents, 26 (62%) had felt scared, frightened, worried, or anxious immediately following mastectomy. The 26 respondents' mean rating was 8.2 for the extent to which they had experienced these emotions. The majority of these 26 respondents explained that they had been anxious to find out the results of their pathology report, which would show whether cancer had spread to the lymph nodes, and whether treatments would be needed beyond mastectomy. Several respondents who did prove to have lymph node involvement said that they had felt frightened and anxious in reaction to the prospect of undergoing chemotherapy treatments. Other respondents reported that they had experienced general fears about their ability to recover from the operation, how successful the operation had

been, and what the future had in store.

At the time they were interviewed, 19 respondents (45%) indicated that they were feeling scared, frightened, worried, or anxious, by rating this item greater than "not at all." The 19 subjects gave a mean rating of 4.8. Most of these respondents explained that they were likely to interpret any physical symptoms they experienced as a possible sign that cancer had recurred. The respondents who reported feeling frightened said they often wondered whether cancer would be found in another body organ, or whether their mastectomy had gotten all the cancer out. For example, one woman said:

> I feel a certain amount of concern because there's always the thought in the back of your mind that it's going to flare up again somewhere else. I'd say because there's always the thought there, always. You don't think about it consciously but sometimes when you can't sleep at night and you're lying in bed you think well what if this happens and what if that happens. So you do, you do think about it, worry about it.

Several respondents who were undergoing chemotherapy treatments were worried about the cumulative side-effects the treatments might have.

Activity responses. Table 4 reports the means and standard deviations for the interview items concerning resumption of pre-mastectomy activities.

Coping measures. Table 5 contains the means, standard deviations, and possible range of scores for the coping measures.

Additional interview items. The means and standard deviations for the remaining scaled interview items are presented in Table 6. The last set of questions listed in Table 6 concerned the respondents' satisfaction with their relationships with other people. After the respondents

Table 4

Means and Standard Deviations for Interview Items Concerning Resumption of Pre-Mastectomy Activities

Interview Item	M	SD
Compared to before the mastectomy, to what extent		
1) are you engaged in your job at the present time?	5.381	1.780
2) are you carrying out daily self-care activities at the present time, such as bathing, dressing, and so on?	6.048	.309
3) are you carrying out household tasks at the present time, such as shopping, cleaning, and so on?	5.524	1.348
4) do you engage in leisure activities at home at the present time, such as watching television, reading, working on hobbies, and so on?	6.167	1.124
5) do you engage in leisure activities outside of your home at the present time, such as going to dinners, movies, sporting events, and so on?	5.881	1.797
6) do you engage in sexual relations at the present time?	5.692	1.673
7) are you functioning adequately overall at the present time, considering all the things we just talked about?	6.024	1.137

(1= much less, 6=same, 11=much more)

Table 5

Means, Standard Deviations, and Possible Range of Scores for Coping Measures

Coping Measure	M	SD	Possible range of scores
BDI	4.524	4.026	0-63
Emotions	86.180	13.089	9-99
Self-esteem	8.975	2.213	1-11
Activities	40.827	5.545	7-77

Table 6

Means and Standard Deviations for Interview Items Concerning Self-Esteem Following Mastectomy, Feminine and Bodily Self-Image, and Satisfaction with Relationships

Interview Item	M	SD
Please rate the extent of your self-esteem immediately following your mastectomy. (1=extremely low, 11=extremely high)	7.900	2.725
To what extent is your body important for your self-image as a woman? (1=not at all, 11= completely)	7.390	3.057
To what extent are breasts important for your self-image as a woman? (1=not at all, 11= completely)	6.000	3.074
Compared to before the mastectomy, to what extent are you satisfied with		
a) your relationship with your husband	6.875	1.718
b) your relationships with your children	7.063	1.740
c) your relationships with your friends	6.786	1.523
at the present time? (1=much less, 6=same, 11=much more)		

had completed each of these three scaled items, they were asked if their relationship with their husband, children, or friends had changed in any way since their mastectomy, and if so, how it had changed. The respondents' answers are summarized in the section below.

Of the 32 married respondents, 16 (50%) stated that their relationship with their husband had changed since mastectomy. Each of these 16 respondents said that she had become closer to her husband as a result of her experience with breast cancer. The following statements were typical of those provided by respondents who felt that their marriage had changed:

> I think we're closer because of what we went through. He says it's the feeling of I thought I was going to lose you. He appreciates me more. I'm not saying that he didn't appreciate me before, but in that way.

> I think he's a little bit more sensitive. He's a lot more--shows his feelings to me a lot more than he did before. 'Cause I think he had the feeling that he definitely was going to lose me, and now in fact if anything I think we're even closer.

Of the 33 respondents who had children, 12 (36%) said that their relationships with their children had changed, because their children had become more attentive and considerate. Representative of the responses given by subjects who felt that their relationships with their children had changed were statements such as the following:

> They seem to be taking really more interest since I've been sick. They like me to be satisfied about everything, and they like to make things nice for me. They always did that but they're just a little more attentive to me than they used to be. So it's a little different because it seems like if I say I want to do something everybody rushes to see that it gets done; or they want to take me some place everybody's around to go. And they like to spend days like Sundays--a lot of Sundays with me. They just come and visit. They pay more attention to me now than they did, I think now.

> They've really tried to help out a lot more. My daughter does a lot more work around the house and helping out. I think it's made them aware that--of other people a little bit more, which I think is good.... I mean I've tried to help them be aware that they can't think of themselves always first; that they have to think of others. And I think this is an important lesson for them to learn. It's helped them in growing up I think, a little bit.

Of the 42 respondents, 17 (40%) stated that their relationships with their friends had changed since mastectomy. These respondents said that they felt more appreciation and closeness for their friends, because their friends had been helpful and concerned throughout their treatment for breast cancer. The responses supplied by respondents who felt that their friendships had changed were illustrated by the statements below:

> They all came through so great. I guess I've learned to appreciate them more since this has happened, and they've shown what they think of me too.

> People have been great, so that I think it's made you aware that you do--the friends are there; that you didn't always know that they're so willing to help out in every way, so that it's nice. I mean not that I want to be dependent on them but they're just always there to reassure me and to help out, which is wonderful.

> In the respect that they've been very helpful. And I think because of that I look at them in a different way than just take them for granted.... It's a good feeling that you end up in the end. You know that--how much people care when you never knew that before because you never took the time to see it, and now you do.

Husbands' Responses to Scaled Questionnaire Items

Table 7 reports the means and standard deviations of the husbands' responses to the questionnaire items concerning causal attributions, perceived avoidability of past and future cancer, success of mastectomy,

Table 7

Means and Standard Deviations for Husband Questionnaire Items Concerning Causal Attributions, Avoidability of Cancer, Success of Mastectomy, and Invulnerability

Questionnaire Item	M	SD
To what extent do you feel each of the following factors was a cause of your wife getting cancer?		
Self	1.727	2.412
Wife	2.091	3.015
Other people	1.091	.302
Environment	2.300	2.111
Chance	4.700	3.773
(1=not at all a cause, 11=completely a cause)		
To what extent do you think your wife got cancer		
a) because of the kind of person she is physically, that is, because of biological or constitutional factors?	5.200	3.994
b) because of the kind of personality she has, that is, because of some character trait(s) she has?	1.455	1.508
c) because of something she did, that is, because of some behavior(s) she engaged in or failed to engage in?	1.727	1.679
(1=not at all, 11=completely)		
To what extent do you believe that your wife could have avoided getting breast cancer? (1=not at all, 11=completely)	1.000	.000
To what extent do you believe that you could have helped your wife avoid getting breast cancer? (1=not at all, 11=completely)	1.727	2.412
To what extent do you think your wife's mastectomy was successful in removing all the cancer? (1=not at all, 11=completely)	8.273	3.259
To what extent do you believe your wife will be free of cancer in the future? (1=not at all, 11=completely)	7.636	3.529
To what extent do you believe your wife will be able to avoid a recurrence of cancer in the future? (1=not at all, 11=completely)	3.333	3.742

To what extent do you believe you will be able to help your wife avoid having a recurrence of cancer in the future? (1=not at all, 11= completely)	2.300	2.830

and invulnerability to recurrence. The husbands were asked to explain why they answered each of these scaled items as they did. Their explanations are presented in the sections that follow.

Attribution to self. Of the 11 husbands, only 1 man felt that he had caused his wife's breast cancer. This man rated the extent to which he was a cause of his wife's cancer as 9, and explained, "My wife worried about my smoking." The husbands who felt that they were not at all a cause of their wives getting cancer explained their response with comments such as: "One can't give someone else cancer," and "Even doctors don't know the cause."

Attribution to wife. Of the sample, 2 husbands attributed the cause of their wives' breast cancer to their wives. One of these two men, who also attributed the cause of his wife's cancer to himself, rated the extent to which his wife was a cause as 11. He explained that his wife had been stressed by worrying about her family. The other man who felt that his wife had caused her cancer rated this item a 3, and explained that his wife had gotten breast cancer because she had accidentally injured her breast. Those men who did not make a causal attribution to their wives explained their response in the same way they explained their response to the previous question. Specifically, they wrote statements such as: "You can't give yourself breast cancer," and "Even doctors don't know the cause."

Attribution to other people. Only 1 of the 11 husbands felt that other people were a cause of his wife getting cancer. This man also made

causal attributions both to himself and to his wife. Furthermore, this man rated the extent to which other people were a cause as only a 2. He explained that his wife was "always on edge" when she was caring for the grandchildren, because "she becomes too involved in their safety and welfare." The explanations of the 10 men who did not feel that other people were a cause of their wives getting cancer were identical to their explanations concerning why they themselves were not a cause of their wives' cancer.

Attribution to environment. Of the 11 husbands, 3 felt that the environment was in part a cause of their wives getting cancer. Two men rated this item a 5, and the third man gave a rating of 6. These 3 men explained that although they did not know the cause of breast cancer, environmental factors might be one cause. The husbands who did not feel that environmental factors had contributed to cause their wives' breast cancer explained that such factors have not been proven to cause cancer.

Attribution to chance. Six of the 11 husbands felt that chance was completely or in part a cause of their wives getting cancer. The mean rating of the extent to which chance was a cause was 7.2 for this group of 6 husbands. These 6 men explained their feeling that chance was a cause by commenting that no one knows the cause of breast cancer. Those husbands who did not feel that chance had been a cause of their wives' cancer generally explained that while the cause of breast cancer is presently unknown, it will be discovered in the future. For example, one man wrote:

> No, there's a reason. We'll find out what it is. I don't believe God does these things. There's a reason we just haven't found out.

Attribution to physical factors. Of the husbands, 6 thought that their wives had gotten cancer in part or completely because of physical, biological, or constitutional factors. This group of 6 husbands gave a mean rating of 8.0 for the extent to which physical factors were a cause. One man explained that physical factors might have been a cause of his wife getting cancer due to the fact that the cause of breast cancer is unknown. Another man explained that his wife's doctor had said that stress contributes to cancer, and that his wife worries a lot. The other husbands who attributed the cause of their wives' cancer to physical factors explained that "there's something biological in there," or that cancer is inherited.

Only one man who did not think that physical factors were a cause of his wife's cancer explained his response. This man felt that his wife had gotten breast cancer because of stress resulting from her concern for her family. His explanation was consistent with the fact that he also attributed his wife's cancer to himself and to his wife, because of stress-related influences.

Attribution to personality. Of the sample, only 1 husband thought that his wife had gotten cancer partially because of the kind of personality she had. This man rated the extent to which his wife's personality had caused her cancer as 6, and explained that he had made this rating because the cause of breast cancer is unknown. Furthermore, the same man gave identical explanations for having rated the extent to which

chance and physical factors were a cause of his wife's cancer as 6. The 10 men who did not make an attribution to their wives' character traits commented simply that nothing has been proven with respect to personality being a cause of cancer.

Attribution to behavior. Two of the husbands indicated that they thought their wives had gotten cancer because of something their wives had done. One man, who rated the extent to which chance, physical factors, and personality were a cause as 6, also rated the extent to which his wife's behavior was a cause as 6. He again explained his response by commenting that the cause of breast cancer is unknown. The other man who indicated that his wife's behavior had contributed to her getting cancer rated this item a 4, and explained that his wife had accidentally injured her breast, which in turn had caused her breast cancer. This second man also attributed the cause of his wife's cancer to his wife. The 9 men who did not think that their wives' behaviors were a cause generally explained that there exists nothing to suggest that behaviors can cause cancer.

Avoidability of breast cancer. As indicated in Table 7, the husbands were asked the extent to which they believed their wives could have avoided getting breast cancer. Table 7 also indicates that none of the husbands believed that their wives could have avoided getting breast cancer to any extent. The husbands were also asked the extent to which they believed that they could have helped their wives avoid getting breast cancer. Only 1 man believed that he could have helped his wife avoid cancer, and he rated this item as 9. This man was also the only

husband to make a causal attribution to himself.

Each husband was further asked if he could think of anything he or his wife could have done to avoid her getting cancer, and if so to explain what they might have done. The only man who indicated that he could have helped his wife avoid getting cancer answered the latter question by remarking that he should have stopped smoking. The other 10 husbands all answered this question by commenting that there was nothing they or their wives could have done differently. One man wrote, for example, that he didn't think a specific action caused his wife's breast cancer, and therefore he couldn't define a way to have avoided it.

Success of mastectomy. When the husbands were asked to indicate the extent to which their wives' mastectomy was successful in removing all the cancer, 4 men responded to this item with a rating of 6 or less. One man, who rated this item a 6, explained, "One year later tests show no further spread; however, tests are not guarantees." Unfortunately, each of the other 3 men failed to explain his relatively low rating. Those husbands who indicated that they believed their wives' mastectomy was relatively successful in removing all the cancer based their answer on "what the doctor said." One man added that he thought his wife's mastectomy was successful because there had been no lymph node involvement.

Free of cancer in the future. Each husband was asked to note the extent to which he believed his wife will be free of cancer in the future. Five husbands rated the extent to which they held this belief as less

than 7. Four of these 5 men also rated the extent to which their wives' mastectomy was successful as less than 7. In explaining why they believed their wives were relatively vulnerable to cancer in the future, these 5 men wrote phrases such as: "have to assume risk is greater," and "she stands only a very slightly higher risk than one who never had cancer."

All but one of the husbands who believed that their wives were relatively invulnerable to cancer in the future based their belief on "what the doctor said." One of these men added that his belief was based on his knowledge of the survival rates of cancer victims. The husband who provided a different explanation as to why his wife would be free of cancer in the future was the only man who attributed the cause of his wife's cancer to himself. He wrote that his wife will be free of cancer "because I stopped smoking and the grandchildren are getting old enough to take care of themselves."

Avoidability of recurrence. The husbands were asked to indicate the extent to which they believed their wives will be able to avoid a recurrence of cancer in the future. Three men believed that their wives will be able to avoid a recurrence to at least some extent, as was indicated by their ratings of 6, 7, and 11 on this item. The husbands were also asked to note the extent to which they believed they will be able to help their wives avoid a recurrence of cancer. Two men indicated that they will be able to help their wives avoid a recurrence to some degree by rating this item as 6 and 9. The man who provided a rating of 6 also rated the extent to which his wife will be able to avoid a

recurrence as 6.

Finally, the husbands were asked to explain what they or their wives could do to avoid a recurrence of cancer in the future, if they thought there was anything they could do. The 3 men who believed that their wives could avoid a recurrence did not explain how their wives could do so. The husband who rated the extent to which he could help his wife avoid a recurrence as 9 was the man who indicated that he was a cause of his wife's cancer. He explained that he could help his wife avoid a recurrence "by doing what I can to help her and try to avoid upsetting her." The husband who rated the extent to which both he and his wife could avoid a recurrence as 6 wrote: "don't know of positive steps to prevent." Those men who did not believe that they or their wives could avoid a recurrence of cancer consistently explained that they knew of no way to prevent cancer.

Pearson correlations were computed between the husbands and their wives' causal attributions for the wives' breast cancer. Specifically, correlations were computed between the following variables: wife's attribution to self and husband's attribution to wife; wife's attribution to husband and husband's attribution to self; and husband's and wife's attributions to other people, environment, chance, physical factors, personality, and behavior. The extent to which the husbands felt the environment was a cause of their wives' breast cancer was significantly correlated with the extent to which their wives felt the environment was a cause ($r=.617$, $p < .05$). There was a marginally significant correlation between causal attributions made by the husbands to their wives' behavior, and causal attributions made by the wives to

their own behavior ($r=.450$, $p < .10$). There were no other significant associations between the husbands and wives' attributions of causality.

The correlation between the husbands and wives' ratings of the extent to which the wife could have avoided getting breast cancer was not computed, because there was no variability in husbands' responses to this item. There was a marginally significant correlation between the husbands' ratings of success of mastectomy and their wives' ratings of success of mastectomy ($r=.454$, $p < .10$). There was significant agreement between the husbands and wives' ratings of the extent to which the wives will be free of cancer in the future ($r=.619$, $p < .05$). Finally, the correlation was computed between the husbands and their wives' ratings of the extent to which the wives will be able to avoid a recurrence of cancer in the future; the correlation was not significant.

Husbands' emotional responses. Table 8 reports the means and standard deviations for the husband questionnaire items concerning the wife's emotions. The means and standard deviations for the questionnaire items regarding the husband's emotions are presented in Table 9.

Husbands' activity responses. Table 10 contains the means and standard deviations for the husband questionnaire items concerning the wife's resumption of pre-mastectomy activities.

Husbands' coping measures. Table 11 presents the means, standard deviations, and possible range of scores for the coping measures completed by the sample of husbands.

Table 8

Means and Standard Deviations for Husband Questionnaire Items Concerning Wife's Emotions

	Questionnaire Item			
	To what extent did your wife experience each of the following emotions immediately following her mastectomy? (1=not at all experienced, 11=very strongly experienced)		To what extent is she experiencing each of the same emotions at this stage in time, also with respect to her mastectomy? (1=not at all experiencing, 11=very strongly experiencing)	
Emotion	M	SD	M	SD
Angry-out: angry or disgusted with someone or something (not yourself)	1.778	1.642	1.222	.667
Ashamed or embarrassed	2.000	2.490	1.000	.000
Displeased with self: guilty, angry at, or disgusted with yourself	2.222	2.333	1.000	.000
Happy or serene	5.100	4.095	7.800	3.259
Optimistic or hopeful	7.778	3.701	8.889	3.060
Powerful, strong, or in-control-of-events	7.700	3.802	9.000	3.127
Proud, worthy, or pleased with self	5.700	4.373	8.100	3.446
Sad, unhappy, or depressed	5.000	4.295	2.000	1.414
Scared, frightened, worried, or anxious	5.100	3.985	2.800	1.932

Table 9

Means and Standard Deviations for Husband Questionnaire Items Concerning Husband's Emotions

	Questionnaire Item			
	To what extent did you experience each of the following emotions immediately following your wife's mastectomy? (1=not at all experienced, 11=very strongly experienced)		To what extent are you experiencing each of the same emotions at this stage in time, also with respect to your wife's mastectomy? (1=not at all experiencing, 11=very strongly experiencing)	
Emotion	M	SD	M	SD
Angry out: angry or disgusted with someone or something (not yourself)	2.111	1.833	1.222	.667
Ashamed or embarrassed	1.000	.000	1.000	.000
Displeased with self: guilty, angry at, or disgusted with yourself	2.000	2.539	1.000	.000
Happy or serene	5.556	4.127	7.556	3.432
Optimistic or hopeful	8.222	3.420	9.222	2.863
Powerful, strong, or in-control-of-events	8.100	3.381	9.300	2.627
Proud, worthy, or pleased with self	6.000	4.546	7.300	4.449
Sad, unhappy, or depressed	5.200	4.131	2.800	3.327
Scared, frightened, worried, or anxious	6.778	3.898	2.333	1.658

Table 10

Means and Standard Deviations for Husband Questionnaire Items Concerning Wife's Resumption of Pre-Mastectomy Activities

Questionnaire Item	M	SD
Compared to before the mastectomy, to what extent		
1) is your wife engaged in her job at the present time?	5.000	2.000
2) is your wife carrying out daily self-care activities at the present time, such as bathing, dressing, and so on?	6.100	.316
3) is your wife carrying out household tasks at the present time, such as shopping, cleaning, and so on?	5.400	.966
4) does your wife engage in leisure activities at home at the present time, such as watching television, reading, working on hobbies, and so on?	6.500	1.780
5) does your wife engage in leisure activities outside of your home at the present time, such as going to dinners, movies, sporting events, and so on?	6.500	1.780
6) do you and your wife engage in sexual relations at the present time?	5.400	1.713
7) is your wife functioning adequately overall at the present time?	5.800	1.398

(1=much less, 6=same, 11=much more)

Table 11

Means, Standard Deviations, and Possible Range of Scores for Husband Coping Measures

Coping Measure	M	SD	Possible range of scores
Wife's Emotions	85.222	14.175	9-99
Wife's Self-Esteem	8.600	2.503	1-11
Wife's Activities	41.111	7.507	7-77

Additional questionnaire items. Table 12 reports the means and standard deviations for the remaining scaled husband questionnaire items. Included in Table 12 are the items which concerned the husband's and wife's satisfaction with their relationships with each other, their children, and their friends. The husbands were also asked if these relationships had changed in any way since their wives' mastectomy and, if so, how they had changed. The husbands' responses are presented below.

Of the 11 husbands, 4 reported that their relationships with their wives had changed since the mastectomy. Regarding how the relationship had changed, these men wrote the following comments: "gotten better for both," "I help more with the housework, such as vaccuming," "stronger relationship," and "better." Of the 10 men who had children, 2 stated that their own or their wives' relationships with their children had changed. One of these men explained the change by writing: "I feel that they now slightly hinder our relationship as compared to before." The second man wrote: "We appreciate our children more now." None of the 11 husbands reported that their own or their wives' relationships with their friends had changed since their wives' mastectomy.

An Attributional Model of Coping

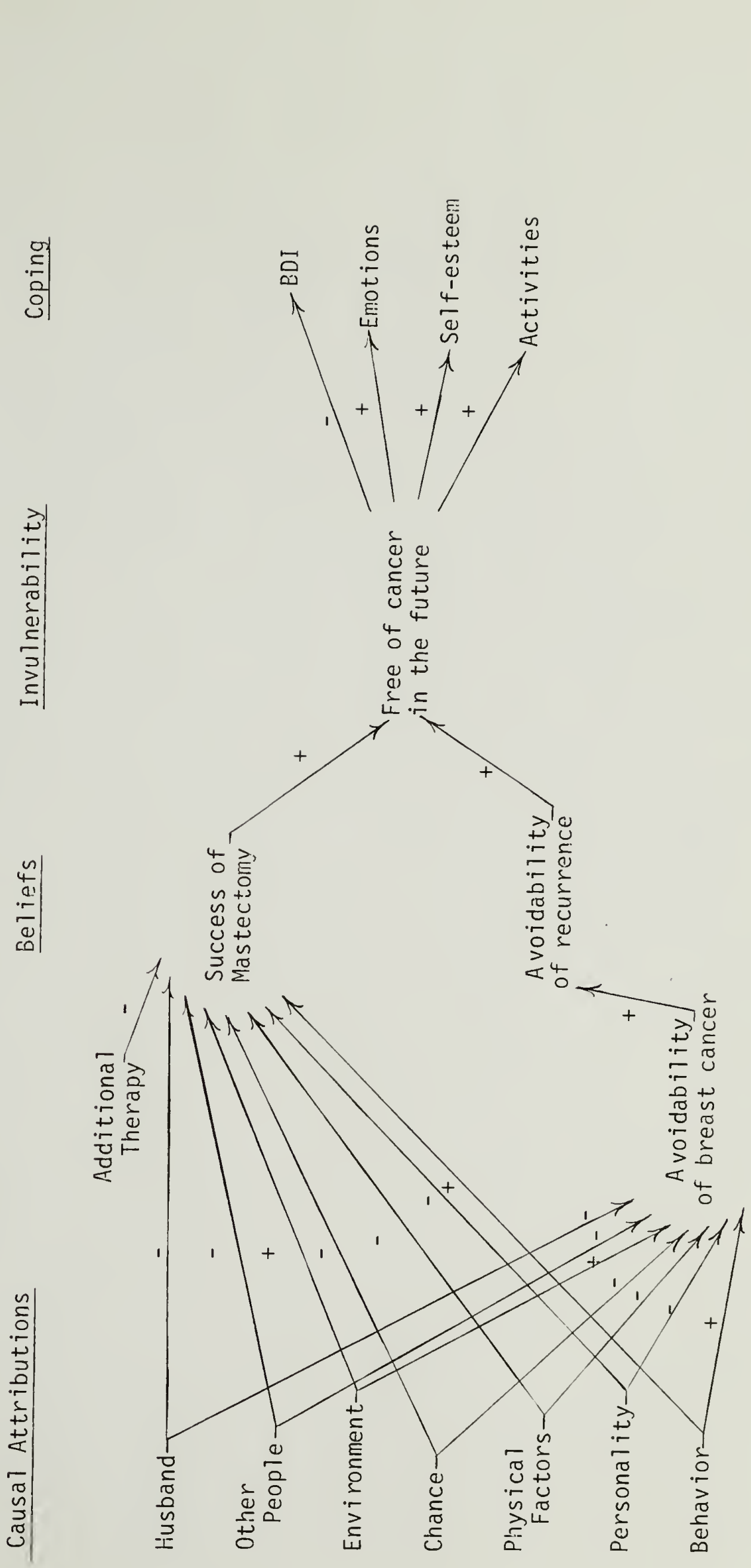
The major hypotheses of the study were tested by means of a path analysis. The path model which was tested is diagrammed in Figure 1. In Figure 1, hypotheses concerning causal order among the variables are represented by the arrows. The signs appended to the arrows indicate whether a positive or negative relationship was hypothesized to exist

Table 12

Means and Standard Deviations for Husband Questionnaire Items Concerning Wife's Self-Esteem Following Mastectomy, Importance of Breasts, Satisfaction with Relationships, and Husband's Activity

Questionnaire Item	M	SD
Please rate the extent of your wife's self-esteem immediately following her mastectomy (1=extremely low, 11=extremely high)	5.300	4.523
To what extent are breasts important for your wife's self-image as a woman? (1=not at all, 11=completely)	6.111	3.258
To what extent are breasts important for your image of womanhood? (1=not at all, 11=completely)	6.625	4.033
Compared to before the mastectomy, to what extent is your wife satisfied with		
a) her relationship with you	7.222	1.787
b) her relationships with your children	6.600	1.578
c) her relationships with her friends	6.300	.675
at the present time? (1=much less, 6=same, 11=much more)		
Compared to before the mastectomy, to what extent are you satisfied with		
a) your relationship with your wife	7.100	1.912
b) your relationships with your children	6.400	1.647
c) your relationships with your friends	6.100	.316
at the present time? (1=much less, 6=same, 11=much more)		
Compared to before the mastectomy, to what extent are you functioning adequately overall at the present time? (1=much less, 6=same, 11=much more)	6.200	.422

Figure 1. Proposed path model depicting relationship between causal attributions and coping.



between variables.

Direct predictor of coping. At the far right of the path model are listed the coping measures. It was hypothesized that a victim would cope effectively with the event of breast cancer, to the extent she felt invulnerable to a recurrence of cancer in the future. Therefore, a negative relationship was expected between feelings of invulnerability and the experience of depression as manifested by higher scores on the BDI. It was also predicted that feeling invulnerable to cancer in the future would result in the experience of positive emotions rather than negative ones. Thus a positive association was expected between feelings of invulnerability and scores on the coping measure Emotions. A positive association was also posited to exist between invulnerability and ratings of Self-esteem, because feeling invulnerable to recurrent cancer would prevent a mastectomee from perceiving herself as a chronic victim. Finally, it was predicted that feeling invulnerable to recurrence would enable a breast cancer victim to resume the lifestyle she had led before mastectomy. Therefore, a positive relationship was expected to exist between invulnerability and Activities scores.

Direct predictors of invulnerability. It was hypothesized that feelings of invulnerability would follow from two beliefs, and that these beliefs would represent two distinct constructs. The absence of an arrow connecting the two beliefs in Figure 1 indicates the expected lack of association between these variables. Specifically, it was predicted that breast cancer victims would feel invulnerable to cancer in the future, if they believed that they will be able to avoid a recurrence of

cancer, or if they believed that their mastectomy was successful in removing all the cancer. Therefore, positive relationships were expected between each of these beliefs and feelings of invulnerability.

Direct predictors of beliefs. The model shows the prediction that a mastectomy patient would believe she is capable of avoiding a recurrence of cancer in the future, to the extent she believed that she could have avoided getting cancer in the past. Thus a positive relationship was hypothesized to exist between the perceived avoidability of breast cancer, and the perceived avoidability of recurrence. It was further hypothesized that causal attributions to controllable factors for the event of breast cancer would enable victims to believe that they could have avoided the event. Therefore, it was expected that negative relationships would be found between the perceived avoidability of breast cancer, and attributions to the non-modifiable sources of husband, other people, chance, physical factors, and personality. Positive relationships were expected between attributions to environment and behavior, and the perceived avoidability of breast cancer, because these causal factors are controllable and modifiable.[6]

In a similar way, it was hypothesized that a breast cancer victim would believe her mastectomy was successful, to the extent that the factors she felt caused her cancer were controllable and changeable. Thus negative signs are appended to the arrows leading from the non-modifiable causes of husband, other people, chance, physical factors, and personality. Positive signs appear for the arrows leading to success of mastectomy from the causal attributions of environment and behavior.

Finally, it was predicted that the extent to which a breast cancer victim believed her mastectomy was successful would also depend on whether her cancer had required therapies in addition to mastectomy. In particular, it was expected that the relationship between the need for additional therapies and the perceived success of mastectomy would be negative.

Attribution to self. Although the respondents were asked the extent to which they attributed the cause of their breast cancer to themselves, this attribution was not included in the path model proposed in Figure 1. Attribution to self was not included in the model because of the distinction suggested by Janoff-Bulman (1979) between behavioral and characterological self-blame. Specifically, as discussed previously, attributions to self have different implications for perceptions of control and invulnerability, depending on whether the attributions are to one's behavior or one's personality. Therefore, it was expected that attributions to personality and behavior would be more informative than causal attributions to self alone.

Causal attributions. Of interest in the present study was the relationship not only between causal attributions and coping, but also the relationships among the causal attributions themselves. One question of particular interest concerned whether making a causal attribution to one factor would be associated with making attributions to other causal factors as well. That is, could the respondents who made causal attributions be considered "high-blamers," in the sense that they attributed the cause of their breast cancer to several factors? To answer this

question, the correlation matrix was computed for the causal attributions contained in the path model proposed in Figure 1. The correlation matrix obtained is presented in Table 13. Table 13 shows that there were only three significant correlations among the causal attributions. Specifically, attribution to husband was positively associated with attributions to other people and personality. Furthermore, there was a negative relationship between causal attributions to personality and causal attributions to chance. The lack of any other significant correlations among the causal attributions indicated that the respondents did not make causal attributions simply because they were "high-blamers."

Results of path analysis. To estimate the parameters of the path model specified in Figure 1, the analysis constructed eight separate regression equations. In these equations, the causal variables hypothesized to have direct causal effects on a given dependent variable were included as predictors.[7] The resulting beta weights were interpreted as path coefficients.

The results of the path analysis are presented in Figure 2. In Figure 2, the arrows represent hypothesized causal paths which were supported by the analysis. Appended to the arrows are the path coefficients; significance levels are given in parentheses. No arrows appear for hypothesized causal paths which were not confirmed.

The four separate regressions of each coping measure on the prior variable--free of cancer in the future--found the variable to be a significant predictor of BDI, Emotions, and Self-esteem, and a marginally significant predictor of Activities. The predictor accounted for 28% of

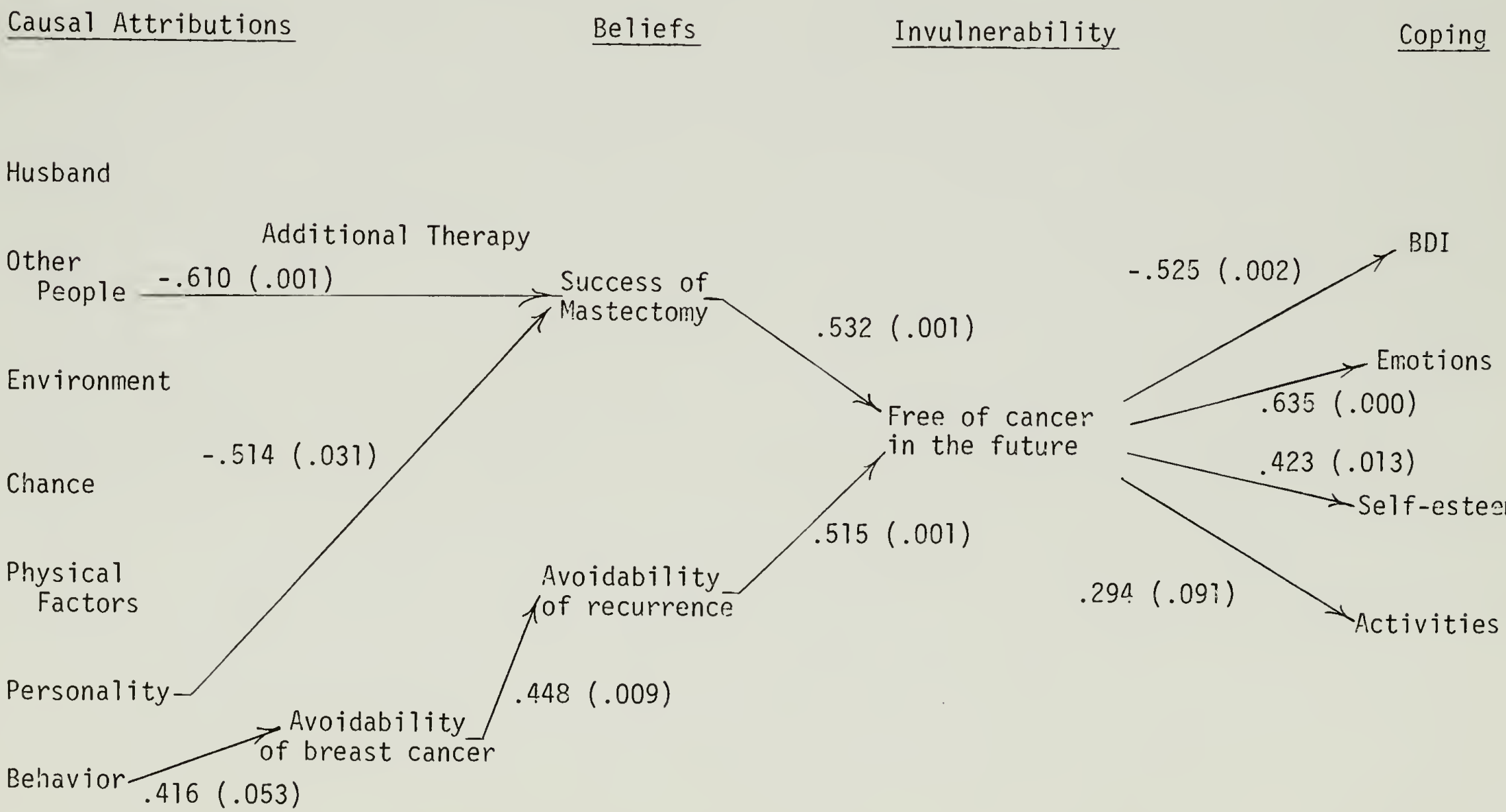
Table 13

Correlations Among Causal Attributions

	Husband	Other people	Environment	Chance	Physical factors	Personality	Behavior
Husband	--						
Other people	.408*	--					
Environment	-.033	-.082	--				
Chance	-.114	-.001	-.231	--			
Physical factors	-.036	.229	-.051	.047	--		
Personality	.710*	.197	.105	-.310*	.154	--	
Behavior	-.092	-.038	-.111	-.004	.096	.173	--

*$\underline{p} < .05$

Figure 2. Results of path analysis.



the variance in BDI scores, 40% of the variance in Emotions scores, 18% of the variance in ratings of Self-esteem, and 9% of the variance in Activities scores. It should be noted that when only one predictor variable is entered into a regression equation, the resulting beta weight is equivalent to the simple correlation coefficient.

The regression of free of cancer in the future on the prior variables--avoidability of recurrence and success of mastectomy--revealed that both predictors were significant. Together they accounted for 43% of the variance in free of cancer in the future ($R=.66$, $p < .001$). The regression of avoidability of recurrence on the prior variable--avoidability of breast cancer--found that the predictor was significant. The predictor accounted for 20% of the variance in avoidability of recurrence. The regression of avoidability of breast cancer on the prior variables--husband, other people, environment, chance, physical factors, personality, and behavior--revealed that only behavior was a significant predictor. The regression of success of mastectomy on the variables prior to it--husband, other people, environment, chance, physical factors, personality, behavior, and additional therapy--found that only other people and personality were significant predictors. Together these two predictors accounted for 69% of the variance in success of mastectomy ($R=.83$, $p < .005$).

The coping construct. The results of the path analysis showed that responses to each of the four coping measures were successfully predicted by the prior causal variables. Further analyses were conducted to determine whether all of the coping measures were tapping a single

construct. Pearson correlations were computed for each coping measure with the other three coping measures. The results are presented in Table 14. As Table 14 shows, all of the coping measures were significantly intercorrelated, with the exception that the correlation of Self-esteem with Activities failed to reach significance. A factor analysis was performed on the coping variables to specifically test the hypothesis that all of the measures represented a common underlying dimension. The results of the factor analysis showed that the four coping measures all loaded on one factor.

The 11 husbands who returned questionnaires completed independent measures of their wives' ability to cope with victimization by breast cancer. These measures were used to assess the reliability of the respondents' self-reports concerning the extent to which they were coping effectively. Specifically, Pearson correlations were computed for Emotions with Wife's Emotions, Self-esteem with Wife's Self-esteem, and Activities with Wife's Activities. The results showed that there was significant agreement between husbands and wives regarding the wife's emotional state ($r=.918$, $p < .005$), self-esteem ($r=.648$, $p < .05$), and level of activity ($r=.675$, $p < .05$). T-tests were perfomed to determine whether the group of respondents whose husbands had returned questionnaires differed from the group of respondents for whom husband questionnaires were not obtained, on any of the coping measures completed by respondents. The results revealed that there were no significant differences between groups on BDI ($t(40)=.07$, n.s.), Emotions ($t(37)=-.34$, n.s.), Self-esteem ($t(38)=1.41$, n.s.), or Activities ($t(37)=.77$, n.s.).

Table 14

Correlations Among Coping Measures

	BDI	Emotions	Self-esteem	Activities
BDI	--			
Emotions	-.618***	--		
Self-esteem	-.408***	.412**	--	
Activities	-.428***	.295**	.212*	--

*p=.10
**p < .05
***p < .005

Two paths to invulnerability. It was hypothesized that the two beliefs which would enable breast cancer victims to feel invulnerable to cancer in the future would represent two separate and distinct constructs. Support for this hypothesis came from the finding that there was no association between the variables of avoidability of recurrence and success of mastectomy ($r=-.207$, n.s.). Further support came from the finding that a different set of emotions appeared to accompany each belief. Pearson correlations were computed for each belief with each of the nine emotions experienced immediately following mastectomy and at the time of the interview, yielding a total of 36 correlations. The results are presented in Table 15. Table 15 shows that avoidability of recurrence was significantly positively correlated with feeling happy or serene, and optimistic or hopeful. Success of mastectomy, however, was significantly negatively correlated with feeling ashamed or embarrassed; displeased with self; sad, unhappy, or depressed; and scared, frightened, worried, or anxious. In general, believing that a recurrence of cancer is avoidable in the future was associated with the experience of positive emotions. On the other hand, believing that one's mastectomy was successful in removing all the cancer was associated with the absence of negative emotions.

Post-hoc model. The path model proposed in Figure 1 was constructed a priori, on the basis of the theoretical justifications which have been presented. The results of the path analysis, presented in Figure 2, showed that the causal links hypothesized to exist in the a priori model were generally confirmed. However, given the variables contained in the

Table 15

Correlations for Avoidability of Recurrence and Success of Mastectomy with Emotional Responses

Emotion	Avoidability of Recurrence		Success of Mastectomy	
	Immediately following mastectomy	At time of interview	Immediately following mastectomy	At time of interview
Angry-out: angry or disgusted with someone or something (not yourself)	-.231	-.239	-.072	-.210
Ashamed or embarrassed	.032	.166	-.476***	-.665***
Displeased with self: guilty, angry at, or disgusted with yourself	.123	.241	-.387**	-.663***
Happy or serene	.321**	.397**	.080	.142
Optimistic or hopeful	.124	.362**	.013	-.064
Powerful, strong, or in-control-of-events	.081	.142	.218	-.011
Proud, worthy, or pleased with self	.020	.124	.204	.133
Sad, unhappy, or depressed	.011	-.069	-.289**	-.223*
Scared, frightened, worried, or anxious	.001	-.189	-.273**	-.673***

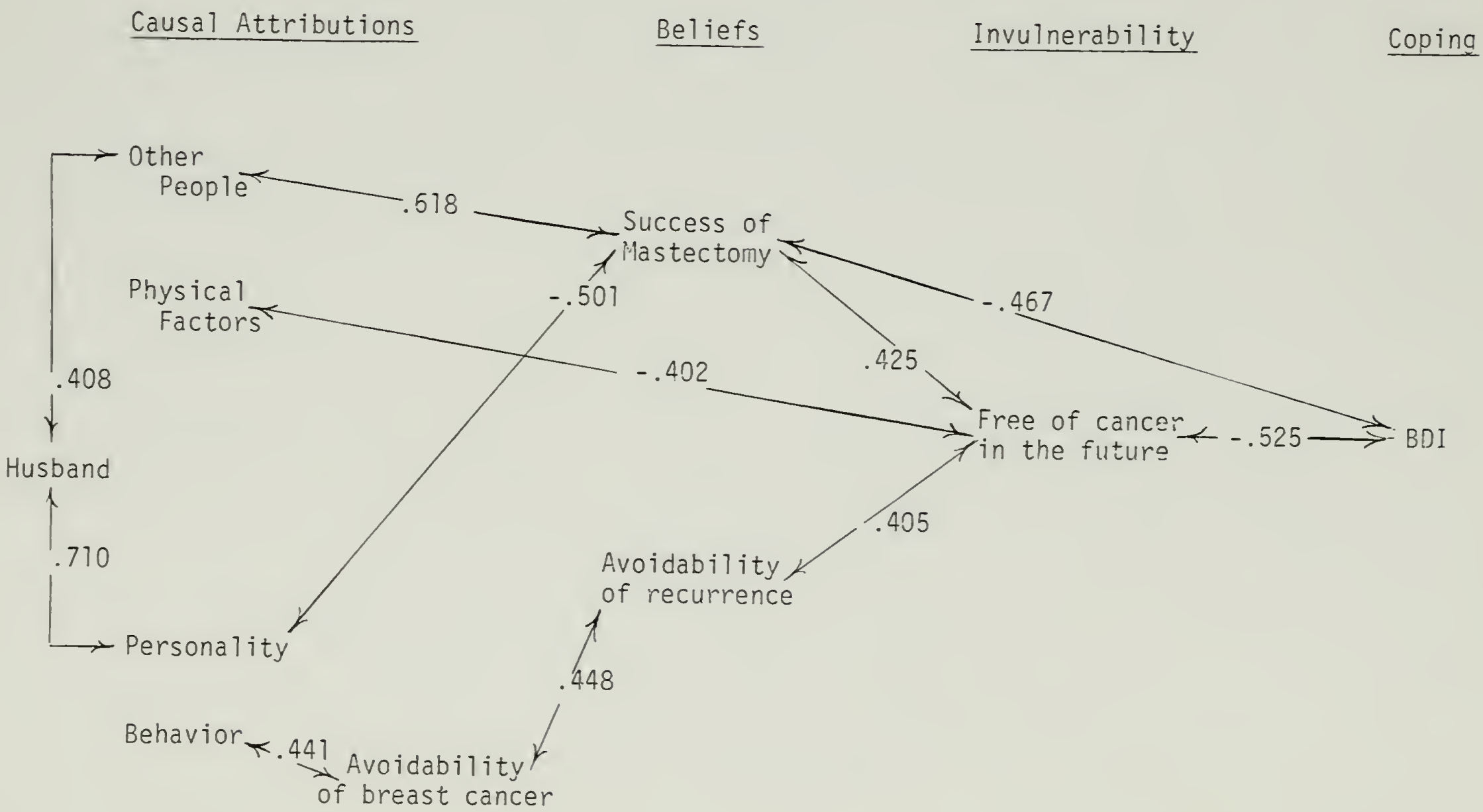
*$p < .10$ **$p < .05$ ***$p < .005$

proposed causal model, it is conceivable that a number of models other than the one presented here could have been constructed and analyzed. Therefore, a post-hoc model was constructed using the same variables contained in the proposed path model. The post-hoc model was constructed in order to examine any relationships among the variables that might have been overlooked by use of the a priori model alone.

To construct a post-hoc model, the correlation matrix was computed for all of the variables contained in the a priori model, except that only one coping measure, BDI, was included in order to simplify the analysis. Once the correlation matrix was obtained, all of the variables showing a correlation of .4 or greater were selected for inclusion in the post-hoc model. The post-hoc model which was constructed is presented in Figure 3. In Figure 3, the variables which were found to have a correlation of at least .4 are connected by double-headed arrows; appended to the arrows are the exact correlation coefficients.

A comparison of Figure 2, which contains the results of the analysis performed on the a priori model, with Figure 3, which contains the post-hoc model, reveals that the two models are quite similar. The similarity of the two models provides further support for the veridicality of the obtained causal model. However, the comparison also reveals that there are two major differences between the models. First, in the post-hoc model, the perceived success of mastectomy is directly linked not only to free of cancer in the future as it is in Figure 2, but also to BDI. In particular, there was a negative relationship between believing that one's mastectomy was successful in removing all the cancer and the experience of depression. The second difference between the models

Figure 3. Post-hoc model depicting relationship between causal attributions and coping. (All correlation coefficients are significant beyond the .05 level.)



concerns causal attributions to physical factors for the event of breast cancer. It was hypothesized that attributions to physical factors would be directly linked to perceived success of mastectomy and avoidability of breast cancer, and thus indirectly linked to free of cancer in the future (see Figure 1). As Figure 2 shows, however, this hypothesis was not supported by the path analysis. The post-hoc model suggests that causal attributions to physical factors are directly linked to feelings of invulnerability. Specifically, a causal attribution to one's physical self for victimization by breast cancer was negatively associated with believing that one will be free of cancer in the future. The post-hoc model also presents the finding that attribution to husband was positively associated with attributions to personality and other people.

Degree of Illness

Of interest in the present study was the extent to which coping differences could be accounted for by the actual degree of serious illness. This issue was addressed by utilizing respondents' self-reports concerning whether or not they had been found to have lymph node involvement. Following mastectomy, pathological examination of the axillary lymph nodes reveals whether the cancer was confined to the mammary gland, or whether cancer had spread to the body's immunological system. If no lymph nodes are malignant, the patient is often told she is cured of cancer. The chances of a cure are reduced in proportion to the number of nodes found to be cancerous (Kushner, 1975). Therefore, the presence of malignant axillary lymph nodes signifies a greater

degree of serious illness. As discussed previously, 36 respondents spontaneously provided information regarding the presence or absence of lymph node involvement. Using these 36 cases, t-tests were performed to determine whether those respondents who had suffered lymph node involvement differed from those who had not, on any of the coping measures. The results of the t-tests revealed that there were no significant differences between groups on the BDI ($t(34)=-1.58$, n.s.), Emotions ($t(31)=.81$, n.s.), Self-esteem ($t(32)=-.23$, n.s.) or Activities ($t(31)=1.63$, n.s.).[8]

Importance of Body and Breasts

Each respondent indicated the extent to which her body, and the extent to which breasts, are important for her self-image as a woman. There was a significant correlation between these variables ($r=.567$, $p < .005$). Analyses were conducted to determine whether the importance of body and breasts were related to the extent to which respondents were coping effectively with breast cancer and mastectomy. Pearson correlations were computed for each of these two variables with each of the four coping measures. The results showed one significant correlation; the extent to which respondents felt breasts were important for their feminine self-image was positively related to Self-esteem ($r=.302$, $p < .05$). However, intercorrelations also revealed that the importance of breasts was positively related to greater delay in seeking medical attention for breast cancer symptoms ($r=.389$, $p < .05$).

Time and Age

It was expected that coping responses would be related to length of time since mastectomy. In particular, it was expected that respondents who were interviewed a greater number of months post-mastectomy would be found to cope more effectively with victimization by breast cancer. However, this was not the case. Pearson correlations were computed between number of months post-mastectomy and each of the four coping measures. The results showed no significant associations.

Similarly, Pearson correlations were computed between age of respondents and each of the coping variables. The age of respondents was not significantly associated with the extent to which they were coping effectively. However, intercorrelations did reveal that older women were more likely to delay going to the doctor after discovering a breast cancer symptom ($r=.448$, $p < .005$).

Responses to Open-Ended Interview Items

Causes of breast cancer. Each respondent was asked why women in general get breast cancer, and why she in particular got breast cancer. In response to the former question, each respondent provided from one to four causes; the mean number of causes given was 2.1. The reasons for women in general getting breast cancer fell into 10 categories. Regarding why the respondents in particular got breast cancer, one to five causes were given by each respondent; the mean number of causes was 1.9. Responses to the question concerning the respondents in particular fell into 12 categories, 10 of which were identical to those for the question

concerning women in general. Table 16 reports the percentage of subjects whose responses fell within each category for both questions.

Heredity. As Table 16 shows, the most frequent response to the questions of why women in general get breast cancer, and why the respondents in particular got breast cancer, was heredity. Respondents in this category stated either that breast cancer victims inherit cancer directly, or that breast cancer victims inherit a genetic predisposition to cancer, which is affected by other factors. When explaining that breast cancer is an inherited disease, the respondents used phrases such as: "it's in the genes," "it's in the blood," "it's passed down through the maternal side of the family," and "if someone in your family has it." Those respondents who thought that they in particular had gotten breast cancer because of hereditary influences often mentioned that they had a family history of cancer, or that some women in their family had also had breast cancer.

General lifestyle. Women whose responses fell into the second category, general lifestyle, stated that a combination of factors all coming together at once might cause breast cancer. The factors referred to, for both women in general and self in particular, included: poor diet, lack of exercise, smoking cigarettes, drinking alcohol, taking medication, and "running your system down."

Hormones. Some respondents who thought that hormonal factors cause breast cancer for women in general referred to actually taking hormones. Similarly, some respondents who felt that hormonal influences had

Table 16

Percentage of Respondents Providing Causes for Women in General, and Themselves in Particular, Getting Breast Cancer

	Interview Item			
	In general, why do you think women get breast cancer?		In particular, why do you think you got breast cancer?	
Cause	%	n	%	n
Heredity	43	18	26	11
General lifestyle	26	11	21	9
Hormones	24	10	24	10
Stress	21	9	19	8
Injury to the breast	21	9	10	4
Environment	19	8	24	10
Physical, chemical, or biological factors	17	7	24	10
Child-bearing factors	14	6	12	5
All people have cancer cells	12	5	10	4
It just happens	12	5	10	4
It was meant to be			7	3
Chance			7	3

caused their own breast cancer explained that they had taken hormones in the past, such as birth control pills, or hormones they had been prescribed after childbirth or hysterectomy. Other respondents felt that there might be a connection between the hormonal changes that naturally result from undergoing hysterectomy, and getting breast cancer. The latter explanation was provided in response to the question concerning women in general, and the question concerning the respondents in particular. Finally, several respondents who attributed the cause of breast cancer to hormones explained that the hormones of pre-menopausal women sometimes "go haywire" for an unspecified reason. The following statement was representative of those provided by the respondents who felt that the hormones in their own body had gone awry to cause their breast cancer:

> The only thing I could think of is like--they talk about the hormones, and I think maybe my hormones might have gone wild or something, or I had too much estrogen in my body. It just happened that way.

Stress. Of the respondents who stated that stress is a causal factor in breast cancer, some felt that a particularly traumatic life event can bring on the disease. The statement below illustrated the responses of those women who believed that a stressful incident had caused their own illness:

> I went through an experience in my family that was very highly emotional to me and I dwelled on it for quite some time.... And maybe that caused it--would aggravation cause it--I don't know. I mean that's the only thing. I did go through a period of about a year or so. My son got divorced and it just devastated me.

The other respondents who mentioned stress as a cause of breast cancer,

for women in general or for themselves, did not refer to the harmful effects of a discrete event. Rather, they felt that breast cancer might be caused by having the kind of personality that reacts to ordinary daily pressures. For example, one respondent who felt that stress had contributed to her getting breast cancer said:

> I do feel that anxiety brings on some of this. I tend to take on people's troubles and keep them within me and churn on it.

Injury to the breast. Those respondents who said that women in general get breast cancer because of an injury referred to both accidental bumps to the breast and purposeful physical abuse by another person, such as a husband. However, the 4 respondents who said that they in particular got breast cancer because of an injury referred to accidental injuries in all cases. Three women stated that their injuries were due to their own actions, and the statement that follows was representative of their responses:

> One year before I had this I fell, and I fell against the ledge of that table over there, so that that table cut me exactly where this lump was. And my mother has always said if you get bruised you're going to get a lump.

The fourth respondent wondered if her husband had unintentionally injured her breast. She said:

> Whenever we went to bed at night I always laid on my side, and my husband would put his arm around and always hold this breast exactly where I got the cancer.

Environment. The 8 respondents who stated that in general women get breast cancer because of the environment all specifically referred to air pollution. They thought that fumes or chemicals breathed in from

the air not only cause breast cancer for women in general, but had contributed to cause their own breast cancer as well. Two respondents believed that their breast cancer had been caused by environmental factors, although they did not believe that other women generally get breast cancer because of the environment. One of these respondents thought that she might have been exposed to radiation through her job in a hospital. The second woman believed that she got breast cancer because she had received an overdose of dental x-rays.

Physical, chemical, or biological factors. This category of responses included women who felt that "something goes wrong" in the body's physical, chemical, or biological make-up to cause breast cancer. Several respondents more specifically commented that a history of benign breast tumors had caused them, or would cause other women, to be predisposed to breast cancer. Also mentioned was the idea that benign lumps "turn into cancer" if they are not removed immediately upon their discovery. Finally, two respondents stated that breast cancer is caused by a virus that is in the air and is breathed into the body.

Child-bearing factors. Subjects whose responses fell into the category of child-bearing factors attributed the cause of their own or other women's breast cancer to one of several origins. Two respondents thought that having a child late in life, or not having a child at all, increases the risk of getting breast cancer. Another respondent stated that the occurrence of breast cancer might be related to sexual activity at a young age. The other respondents included in this category attributed the cause of breast cancer to either breastfeeding children, or failing

to breastfeed children.

All people have cancer cells. The women who gave responses which fell into the ninth category explained that everyone's body has cancer cells, but only in some people do the cancer cells become "activated." These respondents provided hypotheses as to why the cancer cells in their own body, or the cancer cells in other women, had developed into breast cancer. Sample responses in this category were:

> Sometimes cells just kind of go nuts and start reproducing at a rapid rate.... One of the theories they have is some of these cells go nuts and your own--your body's normal defenses will destroy them, but once in a while one of them doesn't get destroyed for some reason. I don't know if it's the fault of your immune system or if it's--who knows?

> I myself think that everybody in the world has some cell in them that has a little cancer. Some people are allergic to something and some people aren't. So I must be allergic to something. I don't know what, but I got it.

It just happens. The tenth category listed in Table 16 includes respondents who were unable to come up with any explanation as to why women in general and/or themselves in particular would get breast cancer, other than "it just happens." Necessarily, then, respondents who were in this category gave no other response.

It was meant to be. Regarding why they in particular got breast cancer, two respondents stated that "it was just something meant to be." A third respondent felt that God had chosen her to have breast cancer, because she had the kind of personality that could cope with it better than others. She explained:

> I feel that this was something that happened and that I guess it happened to me for a particular reason. I don't

> know, I just feel that. God knows why it happened and whether He felt that I could handle it and maybe help other people, I don't know.... I feel that things happen in life and there's a reason why they happen.

Chance. Three respondents felt that chance was one reason they got breast cancer. Specifically, two women said that their breast cancer was due to their "rotten luck." One respondent explained that she thought breast cancer is becoming more prevalent, and therefore she just happened to be one of the many women who get breast cancer.

Why me. In order to gain insights into the respondents' ability to find meaning in their victimization by breast cancer, each respondent was asked whether she had asked the question "Why me?" and, if so, how she had answered it. Of the 42 respondents, 3 (7%) stated that they had never asked themselves the question. Each of the 39 respondents who had asked herself "Why me?" provided from one to three answers to the question; the mean number of answers given was 1.3. The reasons elicited from the respondents seemed to fall naturally into five categories. These categories are listed in Table 17, along with the percentage of the 39 respondents who provided each reason.

No answer. The first category of Table 17 includes respondents who reported that they had not found an answer to the question "Why me?" The 12 respondents who were in the first category gave this response to the exclusion of any other. Sample responses in this category were:

> There is no reason. The reason is I was just a person who got cancer.

> It's one of those things everybody says when something happens to them: "Why me?" No answer to that.

Table 17

Percentage of Respondents Providing Answers to "Why me?"

	Interview Item: Have you ever asked yourself the question "Why me?" and, if so, how did you answer it?	
Answer	%	n
No answer	31	12
Why not me?	31	12
Reevaluation of the victimization as positive	31	12
God had a reason	23	9
Physical factors	18	7

> I kept on saying "Why me?" and I didn't have an answer for it, so I--there's nothing I can say about it.
>
> I still haven't answered it; I still don't know why. It happened, and I just have to accept it.

Why not me. The second category includes respondents who answered the question "Why me?" by saying "Why not me?" Some of these women expressed the feeling that everyone has to face problems in life, and that breast cancer just happened to be one of the problems they had to deal with. The following statements illustrated this type of response:

> Your very first reaction is oh, why is this happening to me; what have I done to deserve this; why is the Lord treating me this way? Then you get your sense back, you know, that's your initial reaction. And it was mine and I think it's everybody's. But then you get your sense of perspective back and you think, well, why not me? ... Well everybody has something.
>
> Why should I be singled out not to have problems? ... I'm not special. There's no reason not to have any problems.
>
> Things do happen to people.... Some people don't have cancer but they do have sugar diabetes, or they have high blood pressure, or some other ailment.

Other respondents in the category of "Why not me?" stated that they got breast cancer because cancer in general, or breast cancer in particular, is a relatively common disease which occurs in large proportions of the population. The following statements were typical of these responses:

> I don't think there's any particular reason "Why me?" in particular. I just think that a certain number of people it's going to happen to and I happened to be one of those people.
>
> In the beginning when I thought about it, I just thought I've got to keep thinking I'm just a statistic. That's the way I looked at it.

Reevaluation of the victimization as positive. Twelve respondents, by stressing positive consequences of their victimization, managed to reevaluate the event of breast cancer positively. A typical response in this category was that given by one woman who said:

> I suppose I wouldn't go through it by choice, that's for sure, but it really--looking back on it I don't see it as a terribly bad experience because some good things came out of it.

Another respondent explained what she had said to her husband when he asked the question "Why you?":

> I think one of the things that I said to him when he said that was because it happened--here we are four months married--but how many people that have been married 40 years don't know what true love is? We do, because we went through this. I'm glad; look what I got out of it. There's a lot you get out of it if you really think.

Some women in this category emphasized that other people are in worse situations than their own, and that they were fortunate to have a relatively positive outcome. The following statements were representative of these responses:

> I felt that if it did prove to be cancer there's a lot worse things than losing my breast. I mean I felt gee, there's so many people that can't even walk or anything.... So I really got over that feeling, that "Why me?" Because I just felt there's so many people a lot worse off that it really didn't affect me that much and--I mean I took a positive attitude.

> I look around and see all the other people that are having cancer and some so much are worse.... I had thought it ["Why me?"], but I also realize that I was luckier than a lot, and I shouldn't be crying about what's happening to me when I see what's happening to so many other people.

Finally, several respondents answered the question "Why me?" by saying "better me than someone else." These respondents made statements such as, "I would prefer it's me than my family," and:

> I figure it has to happen to somebody and why somebody else? ... I wouldn't want anybody else to have it.

God had a reason. One response to the question "Why me?" was an explanation that revolved around the fact that God had a reason for victimizing the respondent. Sample responses in this category were:

> I'm Catholic. Things happen, they happen. I don't like to question anything. I wish it didn't happen to me but it did and there's a reason for everything.... I feel things happen for a reason. That's my answer to everything as far as things like that.

> I am a fatalist and most things that happen I figure there's a reason for it. I have a deep faith that there is a reason for everything and it was just my time.

Several respondents appeared to interpret the event of breast cancer as a test given by God. This explanation was illustrated by the following statement:

> I think the good Lord was testing me for my endurance.... I just feel I was chosen. I don't know why I was chosen to have it. As I said before, maybe it was the good Lord's way of just trying to see how much I could cope with and everything.

Other respondents felt that God had chosen them to have breast cancer, because they could cope with it more effectively than other women. For example, one respondent stated:

> Maybe I feel that I'm stronger than some people. Maybe if another person got it they couldn't take it. Because like my other friend, she had told me that she cried and cried, and I said, "Well what did you cry for?"

Physical factors. Some of the respondents who fell into the category of physical factors felt that they had gotten breast cancer because of hereditary influences. The responses of women who thought that they had inherited breast cancer consisted of statements such as the following:

> I do feel within my own family it's hereditary; there is a tendency for it.... My mother thought that she was kicked by one of the grandchildren and that brought her's on. I wasn't injured in any way that way. I do feel that it's mostly hereditary.
>
> I don't know if it's--you know, like sugar diabetes--they claim that's hereditary; or heart disease. So I don't know if they got that in the same category or not, cancer.... I feel somewhere along the line our family had it. I had five in the family--my father and his two sisters, a son, and a daughter. But still I just--that's the way I feel. It just didn't stop, you know.

While other respondents did not believe they had inherited the disease, they did feel that some flaw in their physical make-up had caused them to have breast cancer. For example, one woman explained:

> I think the explanation when they find it is going to be in something physical, chemical, biological--in that sense--in the body. My own sense of it is that maybe 100 years from now they'll know why I got it, or why someone else got it.

This category also included respondents who attributed the cause of their breast cancer to the fact that they had taken hormones.

Changes in world-view. Each respondent was asked if any changes had occurred in her view of the world as a result of having breast cancer. Of the 42 respondents, 12 (29%) reported that their world-view had not changed. Of the 30 respondents who did report that changes had occurred in their views of the world, one to four changes were provided by each respondent; the mean number of changes reported was 2.3. Responses to the question concerning changes in world-view fell into seven categories, which are presented in Table 18. Table 18 also presents the percentage of the 30 respondents who provided answers within each category.

Appreciate life. The most frequent response to the question concerning

Table 18

Percentage of Respondents Reporting Changes in World-View

	Interview Item: What changes, if any, have occurred in your view of the world because of your breast cancer?	
Change	%	n
Appreciate life	60	18
Better person	30	9
Face negative events	27	8
Reorder priorities	20	6
Please self	20	6
Worse person	17	5
Activity decrease	17	5

changes in world-view was that the event of breast cancer had fostered a greater appreciation for life itself, and for other people. This sense of a new appreciation for living was illustrated by the following comments:

> I'm appreciating things that I didn't appreciate before. Really, really appreciating being alive, which I took for granted.
>
> I think I really do look at it saying hey, I'm glad I'm alive.... I probably appreciate my family more.
>
> I do appreciate life more, and I think you get that from just having a close brush. For me it was a close brush.

Some respondents stated that they expressed their new-found appreciation for life by no longer procrastinating pleasures, as they had before victimization by breast cancer. Sample responses given by the women who expressed this view were:

> And I'm going to do what I want now. I'm not going to put things off for future gratification because that little question is always in the back of my mind: will I be alive when I'm 65 to do all these things? And that's not really anything I ever thought of before.
>
> I probably make more positive decisions to go ahead and do things instead of saying well, I'll do it in 10 years. And a little voice in the back of my mind says gee, you might not be here in 10 years. Then I say no, no, no, I'll be here in 10 years, but let's do it now anyway; kind of hedge your bets.
>
> I think I--well, I try, I'm not sure I accomplish it--but I try not to put things off. If I want to do things I do them.... So I'm trying to do things that--to make the most of everyday I guess. Feeling that oh, there's always tomorrow--well this scares you a bit; you're not so sure of your tomorrows as you used to be.

As the last statement illustrated, several respondents in this category stated that since the event of breast cancer, they had made an effort "to live one day at a time." The following statements further illustrated

this type of response:

> Yes, we have--I have changed. We, or I, live each day and enjoy each day and do the best I can.... I think you enjoy life a lot more; appreciate people around me.
>
> I think my philosophy to that would be like I said before: take one day at a time. I think if you can do that you become not as nervous, not as stressful; quiet, nice quiet person. Not quiet like you don't have a good time; you do have a good time. Actually, you probably have more of a good time. But I think if you can take one day at a time then you're at peace with yourself. And I think that's what it's all about, is just being at peace.

Finally, two respondents in this category stated that because breast cancer had enabled them to reaffirm the value of life, they were trying to be more active than they had been before mastectomy. These women said:

> If anything, I live a little faster and try to do a little more than I ever did.... I've always enjoyed life to the fullest. If it's possible, I'm doing that even more now.
>
> The only thing I figure is that I'm going to try and see everything I can, and do a little bit more than I did, because I figure well, there's always a chance I might--my time might be shorter than I had planned.

Better person. Of the 30 respondents who reported a change in world-view, 9 stated that they had become better people as a result of having breast cancer. In explaining how they had become better people, these respondents asserted that they were more tolerant and compassionate of other people, and that they had "learned a lot" and "become more aware." Specifically, these respondents gave explanations such as the following:

> Like I said, I am a better person for having gone through it. I've learned a lot, which there's no paper long enough I think for me to think how to say it. We'd be here for another--a day, at least. But I would just have to say that I am totally all over a better person. Not

> that I wasn't before, because I've always been a pretty nice person, but I think I try even harder to be even nicer. And I see things a lot differently.
>
> Well I think I've become aware of--more aware of how other people have problems. And I've had an awful lot of help from other people--their concerns for me--and I think it's probably made me more aware of other people's problems; not my own necessarily, but other people's. And being more sensitive to their feelings, and perhaps having that can help them. So this is--I think it's helped me in this respect. I probably am--I was always a person that was more concerned with other people, but I think this might make me more aware of their feelings, their problems, and trying to help other people.

Face negative events. Eight respondents stated that their views of the world had changed since they had breast cancer, because having the disease had forced them to face the realities of negative life events. Specifically, these women reported that they had been forced to cope with the idea of their own mortality, as well as their fears of recurrent cancer. The following statements were representative of these responses:

> It made me face my own mortality and I think that's something most people deny. Once you have cancer you're no longer allowed that luxury.
>
> It's a sad commentary to say that you don't think about dying until something like this happens to you. Or say it was another ailment, and I look around me and I see all kinds of ailments. It seems that most people have to have an ailment before they die. And I think that the outcome is scary because nobody knows the outcome. You don't know 'til you work in a hospital and you see it. And that's why I always want to dedicate myself to help other people in hospitals and nursing homes, but I can't bring myself to go to those places because it's upsetting to me now, but it wasn't before.
>
> Just for the only thing that probably bothers me is how long do I have, or if it's going to go somewheres else in my body. And maybe I just get scared about that part, that's all.

Similarly, several respondents stated that since the event of breast cancer, they had become more attuned to reminders of cancer in the environment. One respondent said, for example:

> Well you're more conscious of everything to do with cancer. Anything you see in the paper to do with cancer you read. Or in a magazine--that's the first thing that'll catch your eye immediately.

Reorder priorities. Six respondents stated that having breast cancer had caused them to reorder their priorities in life. These women explained that their values had changed since mastectomy, in the sense that many things they had considered important were no longer of consequence. The following statements were representative of those provided by these 6 respondents:

> The biggest one is a reordering of priorities.... I really don't give a damn if my kitchen is dirty, sometimes to a fault. And I used to be so uptight; everything had to be perfect.
>
> There's a lot of things, just stupid little things that seemed important to you that don't anymore.... Television isn't important. Not that television was that important to me, but like--I have to watch this program--I couldn't care less about it now. My family's more important, but little things that meant things to me are not important. So I'd have to say that things are changed in that way.
>
> The things that used to bother you don't bother you anymore, because they're not--they're sort of minor in relation to other things; in relation to your health. Your health is most important.
>
> I have a lot less concern about worrying about money. Money can't buy you health, so for heaven's sakes go spend it and do things. A few years ago I wouldn't have done that.

Please self. Six of the 30 respondents stated that since their victimization by breast cancer, they had become more concerned with pleasing

themselves than with pleasing other people. For example, two respondents made the following comments:

> I guess in a way I've always been a selfish person in terms of taking care of myself, but I think more so now.

> I think I do take more time maybe to please myself. Like instead of maybe doing the housework I read a book.

Four respondents specifically remarked that since their illness they were more likely to decline others' requests for help. Sample responses for this change in world-view were:

> I used to try to please people even if I didn't feel like it. Now I'm more apt to say no, I don't think I'd like to do it.

> I'm more aggressive. I noticed it slowly creeping over me. Not in the beginning I wasn't, but I found out I won't take too much from people. Before, I'm sort of one of those people you can wipe your feet on, and I don't let them do it anymore. I also say no more than I used to. If someone calls and asks me for help, if I'm really tired I'll say no.

Worse person. Five women reported that they had changed in a negative way since they had undergone mastectomy. Two respondents explained that they were apt to be less tolerant of other people than they had been before their experience with breast cancer. They said:

> Well I do tend to criticize if someone doesn't pick up their things or--I don't criticize to them, but within myself: why don't they do this, and don't they know that I can't do that kind of work? And I tend to do that a lot more. I was always one who'd pick up after them and do the heavy work and so forth, but now I feel gee, my husband should see that that door is heavy for my arm, and he can close it for me and things like that. Yeah, I tend to do that a little bit more than I used to.

> The only thing that it has changed is that I am a little bit more irritated with people that are petty, get upset about things that are so irrelevant. I just--I have no patience with that.

A third respondent explained that losing her breast had caused her to feel less womanly:

> You feel a little less than feminine. You feel a little self-disgust when you look at your body. There's something missing and you do feel a little less than feminine, wholly feminine. You feel those sorts of things. I've noticed all that.

Finally, two respondents stated that since their victimization by breast cancer, they had felt less capable of coping with life in general. One of these respondents explained her feelings by saying:

> I don't adjust like I used to to things. Seems like I just can't get adjusted to my--'cause some days you feel good and some days you really don't feel like you want to do nothing. That's the way I feel. I mean some days you might feel like you'd like to go somewhere and the next day you'd rather--you feel like you never want to go anyplace, or--I don't know. You have a funny feeling, I think.

Activity decrease. Five respondents reported that they had become less active since mastectomy. Three respondents, all of whom were having chemotherapy treatments at the time they were interviewed, stated that they had become less interested in social activities than they had been before treatment for breast cancer. Two of these women made the following statements:

> Well I do get my down moments and I just--I used to be very outgoing and helping the neighbors, and helping people in church, and I find it a real effort to extend myself. I still do it; I've made terrariums and sent them to shut-ins, and I send cards out, but I don't reach out to people the way I used to. I tend to stay withdrawn and I'm more comfortable withdrawn.... When people come, the neighbors come in and all, it's fine, but I tend not to go to the neighbors to see how they are, and that's--I know it isn't good, but I just can't do it.... I have to physically force myself to do the things that I should do and I've never had to do that. I used to always run up the stairs and run here and there--all the things--and I can't do that. And it's difficult for me to accept it.

> I don't have much interest in going or in doing the things that I used to. I liked to go and do different things and everything. Seems like I kind of lost interest in my going--things like that--activity. I always feel like I just need to relax. Seems like that's better for me than out trying to do something because I get tired out. So most of them I'm just staying at home. Just once in a while I get out and go places, but not too often, not like I have did. 'Cause when I was well I was going all the time, quite a bit, but I don't do that now.

The two other respondents in this category stated that because the mastectomy had restricted their arm use, their activities had become more limited.

Vulnerability. Each respondent was asked if having breast cancer had challenged any of her basic assumptions about her own vulnerability. Quite often the respondents requested that this question be clarified, and the interviewer inquired whether the respondent had felt less safe or less protected since the event of breast cancer. Of the 42 respondents, 16 (38%) reported that their victimization had fostered a new sense of their personal vulnerability. These respondents explained that their sense of vulnerability stemmed from the feeling that they had lost control over their lives, the threat of recurrent cancer, or the fact that they had faced their own mortality. The following statements were representative of these responses:

> I do feel more vulnerable now. I don't have the control I thought I had. I'm not running the show.

> I feel less safe. There's a little fear. I hope everything will be all right, but I don't know if it will or not. That builds up a little fear; I have this. I try not to think about it. I try to push it from my mind, but you can't completely push it.

> One thing about things like that, you never know--you just feel like most any time maybe you might get sick and something

> will come right on you, something like that. So I would say less protected, more than I did before. Because I wasn't too worried about my condition or something like that, 'cause I mean I wasn't sick or anything.
>
> I'm vulnerable, I'm--what is the word--susceptible, let's say that, because the germ was in my body and there's always the possibility that it may reoccur.
>
> Only to the extent that you worry about it; if you do get it again you're going to catch it in time, that sort of thing. Yeah, from that standpoint, yeah.
>
> Yeah, it makes you think. You think well, you're going to be here forever and then you realize wow, you're not. Kind of a shock but then you--you kind of get used to it and try not to think about it too much.... But it makes you think. Most of the time I just try and forget it and pretend I'm a normal person.
>
> I feel more vulnerable. I don't think about it a lot, but I now know someday I'm going to die; I face that.

Twenty-six respondents stated that their assumptions about their own vulnerability had not changed as a result of having breast cancer. These women generally explained their response by saying that they tried to avoid the issue of personal vulnerability, because they would be unable to alter the future course of events. The statements below illustrated the responses provided by this group of 26 respondents.

> I had one day of crying and all that stuff. But then I got to the point, I said, this is ridiculous; I can't change anything. No matter how much I worry or cry or get upset, it's not going to make any difference. So I've really put that with everything. I don't feel that I'm going to get something more than someone else. I just don't think about it. I've been putting it out of mind, because if it's there I'm not going to be able to change it.
>
> No, not really. What's to be is to be. If something's going to happen, it happens. You just get back up there and you fight. So everyone will go through something, more likely. You don't know, you just have to take it one day at a time. Today's today, tomorrow's tomorrow. I'm not going to think about tomorrow; I got today to think about. So I guess that would be it.

Intercorrelations revealed that respondents who reported feeling more vulnerable since their victimization by breast cancer were more likely to make causal attributions to chance ($r=.280$, $p < .05$), were less likely to believe that they will be free of cancer in the future ($r=-.302$, $p < .05$), and obtained lower scores on the coping measure Emotions ($r=-.370$, $p < .05$). Interestingly, a negative relationship was found between feeling more vulnerable and the presence of lymph node involvement ($r=-.313$, $p < .05$).

Fairness of outcomes. The respondents were asked if having breast cancer had challenged any of their assumptions about how fair outcomes are. Only one respondent stated that her assumptions about the fairness of outcomes had changed, in the sense that she felt the world was less fair than she had before mastectomy. This respondent was the youngest woman in the sample, and she explained, "I used to think that it wasn't fair that I'm only 23 years old; and that should happen to somebody that's in their 60's." The 41 respondents who reported that their assumptions about the fairness of outcomes had not changed because of having breast cancer generally explained their response in one of four ways. One group of respondents explained that even before victimization by breast cancer they had not felt that the world is fair. The following statements were representative of this type of response:

> Absolutely not. I don't think the world is fair period. I never have thought it was.

> Well I guess I never did think it was fair. It's something that occurs to you when you see people that live such rotten lives. They're such terrible people and they go along their gay merry way and nothing's happened to them. But the people

> who try to be decent and live right and--they're the ones that seem to get it.
>
> Oh you've got to accept it the way it comes; that's just the way it is. Life is unfair and there's no--you can't predict, you really can't, because some people seem to sail right through, they really do, and they are the fortunate ones.... It's very much--it's how you think; it's what kind of a person you are. That life is--there's no guarantees in life, and there's no one that's going to have like a wand that says you're going to have a perfect life. No way, no way; it just--too many things have happened to too many people that I know, very close.

A second group of respondents explained that their assumptions concerning the fairness of outcomes had not changed, because everyone must experience negative outcomes in life. Typical responses given by these respondents were:

> No, I don't. I mean it never occurred to me that this is unfair. Everybody has some trouble. Well I think we might be very peculiar if we didn't. Why should somebody else get all of them?
>
> No, because there are so many of us who have had it. And it's, as I say, such a common occurrence now. Maybe years ago they had it, but people didn't run to doctors, and they didn't have the media.

The third group of respondents had managed to focus on positive aspects of their victimization by breast cancer, and thus did not change their assumptions about the fairness of outcomes. Sample responses provided by this set of respondents were:

> No, I don't think so; not really, not in that sense. Like I say, I felt that I had been lucky compared to so many people whose cancers were too far advanced to be operable or something like that. So no, I don't feel that that has made any difference in the way I feel about the fairness of life. I don't think there's any justice anyway.
>
> No, I think I feel pretty good about life because I think I got a lot better chance than a lot of people have had with cancer. And I feel pretty good about it so--I think I got more than my fair share.

> No, I don't think so because I got--I sort of got my sense back together after--you know, fair I happen to have this. I got to realize that maybe there were benefits; that maybe this was something that was meant to happen to me in order to have something nice happen to me.

Finally, several respondents stated that their thoughts regarding the fairness of outcomes had not been challenged by having breast cancer, because "life is what you make it." For example, one respondent made the following comment:

> No, because I think it's how you make it. I don't think anybody owes you anything in the world.

Husbands' Responses to Open-Ended Questionnaire Items

Each husband was first asked to describe his wife's general reaction when she found out she had breast cancer. Similarly, the husbands were asked what their general reactions were when they found out their wives had breast cancer. The husbands' responses to both of these open-ended questions are presented in Table 19.

Causes of breast cancer. Each husband was asked why women in general get breast cancer, and why his wife in particular got breast cancer. In response to the former question, 10 of the 11 husbands wrote that they had "no idea" or didn't know why women generally get breast cancer. One man answered that in general women get breast cancer because of "stress from worrying about family." Only 2 of the husbands had a hypothesis as to why their wives in particular got breast cancer. One man explained that his wife had gotten breast cancer because of "stress from worrying about family," as he had for the question concerning women

Table 19

Husband's Responses to Questionnaire Items

Concerning Reactions to Breast Cancer

Questionnaire Item	
What was your wife's general reaction when she found out she had breast cancer?	What was your general reaction when you found out your wife had breast cancer?
Response	
It was disturbing to her.	Very disturbed; more disturbed than my wife.
Initially, right away, sad. That was for the first hour or two--she was under anesthesia when I told her, and she was sad. But for the next few months, starting from that first sadness, she was more fight.	It was a shocker when he said we've got the problem because I wasn't expecting anything at all. I just went in and said this is routine; they all have this thing; this is precautionary. It was sad. I tried to find a church to pray in and they were all locked up. I shed a tear.
Afraid--for me, her family, and herself.	Very concerned and somewhat angered.
She was quite upset, but after we got home from the doctor's she started packing her clothes so she'd be all set for the hospital.	I too was upset because I lost both of my folks to different types of cancer, but couldn't figure out why my wife should get it and I didn't.
Accepted it.	Accepted it.
Worried.	Worried; hoped it had been discovered before it had spread to other areas.
Shock, numb, but behaved quite bravely.	Worry, fear.
Upset a little.	Upset plenty.
Shocked.	Shocked.

Would have liked to ignore it since she felt fine.

Concerned--she needed support.

More concerned about long-term than short-term.

Very confident that she would be cured!

in general. The second husband wrote that his wife's breast cancer was due to an injury. Of the 9 husbands who didn't know why their wives got breast cancer, only one man explained his response further by writing, "no family history or other indicator."

Why her. In hopes of gaining insights into the husbands' ascriptions of meaning to their wives' victimization by breast cancer, they were asked whether they had asked the question "Why her?" and, if so, how they had answered it. Of the 11 husbands, 3 stated that they had never asked themselves the question. Of the 8 men who had asked themselves "Why her?" 6 wrote that they had not found an answer to the question. These 6 men gave responses such as:

> I asked myself the question thousands of times, but never got an answer.
>
> Yes, but how do you answer it?
>
> I asked myself that question since we found out she had cancer and if I could answer that it could help a lot.

One of the two men who had found an answer to the question "Why her?" wrote, "It must be God's will." The second man wrote, "A chance event; not a direct cause and effect relationship."

Changes in world-view. Each husband was asked if any changes had occurred in his view of the world because of his wife's breast cancer. Only 3 men reported that their world-views had changed as a result of their wives' victimization. These 3 men provided the following statements:

> I'm a little bit more thankful for what we have. You put what's important in perspective. You're damned happy that you're alive.

> It has made me value her more. It has led me to further believe that God has been letting mankind alone, and we suffer from many things that mankind has done in opposition to God's will and laws.
>
> I've always been wondering why so many young people are afflicted with various fatal diseases. I more or less have come to expect most anything over the age of 60, but can't quite cope with being told it was the will of God when youngsters pass away. I believe that if He had spent more time in perfecting the human being, a lot of suffering could have been eliminated.

Of the 8 husbands who did not report that any changes had occurred in their views of the world because of their wives' breast cancer, 3 men explained their responses. The following comments were provided by these 3 men:

> We have to take what we get and live the best we can.
>
> Not to any major degree. The point is to keep on living and doing, not to change the world.
>
> I was already a victim of cancer.

Vulnerability. The husbands were asked if their wives' breast cancer had challenged any of their basic assumptions about their own vulnerability. Only 1 of the 11 husbands stated that his assumptions about his personal vulnerability had changed. He wrote, "I suppose I feel more vulnerable. I'm a little more scared of cancer now, for all of us." Only 1 man explained why his assumptions concerning his vulnerability had not changed, and he stated that since he had been a cancer victim himself, his wife's breast cancer had not made him feel more vulnerable to cancer.

Fairness of outcomes. Each husband was asked if his assumptions

concerning the fairness of outcomes had been challenged by his wife's victimization. None of the 11 husbands stated that his assumptions of fairness had changed. Two men explained their responses by providing the following comments:

> Nobody ever told me life was "fair" so I don't have a hang-up on it.
>
> It has confirmed my belief that life is not fair because of many factors beyond one's control.

A third man explained, as he did for the previous two questions, that he had already been victimized by cancer.

C H A P T E R IV

DISCUSSION

Throughout the following discussion of the major findings of the study, the limitations of path analysis as a method of testing hypotheses should be kept in mind. Although the results of the path analysis were consistent with the causal relationships imposed on the variables contained in the path model, the fact that the analysis is based on regression procedures precludes any conclusive statements about causality. Thus the data are correlational in nature, and validation of the proposed causal relationships will require further experimental investigation.

The hypothesis that mastectomees would cope effectively with victimization by breast cancer to the extent that they felt invulnerable to a recurrence of cancer in the future was supported by the data. Coping responses were successfully predicted by the extent to which breast cancer victims believed they will be free of cancer in the future. Mastectomy patients who reported feeling relatively invulnerable to cancer in the future coped more adaptively with their victimization than those who reported feelings of vulnerability. This finding is consistent with earlier work done by Weisman (1979) on the relationship between invulnerability and coping by victims of cancer.

Support for the reliability of the relationship obtained between invulnerability and coping was provided by the finding that invulnerability

was a significant predictor of responses to three coping measures--BDI, Emotions, and Self-esteem. Mastectomy patients who felt relatively vulnerable to cancer in the future were more likely to be depressed, to be experiencing negative emotions, and to have lower self-esteem. Furthermore, those who felt vulnerable to cancer in the future were somewhat less likely to have resumed their pre-mastectomy activities; however, the relationship between invulnerability and Activities was only marginally significant. The finding that multiple operationalizations of the coping construct were successfully predicted by the extent to which mastectomy patients believed they will be free of cancer in the future provides clear evidence that the relationship found to exist between invulnerability and coping is a valid one.

The respondents' self-reports regarding their adjustment to victimization by breast cancer were found to be reliable, in that there was significant agreement between the husbands who returned questionnaires and their wives, concerning the adaptiveness of the wives' coping responses. One explanation for the agreement between husbands and wives on the coping measures could be that the couples discussed and arrived at the "correct" responses as the husband completed his questionnaire. However, this explanation appears unlikely in light of other findings. Specifically, there was little agreement between husbands and wives as to their causal attributions for the wife's breast cancer, or their perceptions of the avoidability of the wife's cancer in the past and future. This lack of agreement surrounding the issues of causal attributions and perceived avoidability of cancer suggests that the agreement between husbands and wives on the coping variables cannot

be explained simply by the fact that the couples discussed the appropriate responses for the husband to make.

The results supported the hypothesis that feelings of invulnerability to cancer in the future would follow from two beliefs. The extent to which mastectomy patients felt invulnerable was significantly predicted by the extent to which they believed their mastectomy was successful in removing all the cancer, and the extent to which they believed they will be able to avoid a recurrence of cancer in the future. Believing that one's mastectomy was successful, or that one will be able to avoid a recurrence of cancer, was positively associated with believing that one will be free of cancer in the future.

The two beliefs which were associated with feelings of invulnerability appeared to represent more than beliefs relating specifically to the respondents' experience with breast cancer and mastectomy, but general beliefs about the self as well. The subjects who indicated that their mastectomy was relatively unsuccessful in removing all the cancer seemed to feel that cancer had become a permanent part of themselves, and that any attempts to alter the future progression of their disease would be as unsuccessful as their surgery had been. Sontag (1978), in her discussion of the popular mythology of cancer, provided an appropriate description of the point of view expressed by those respondents who thought that their mastectomy had not succeeded in ridding them of cancer. She wrote: "However 'radical' the surgical intervention, however many 'scans' are taken of the body landscape, most remissions are temporary; the prospects are that 'tumor invasion' will continue, or that rogue cells will eventually regroup and mount a

new assault on the organism" (pp. 64-65). When asked the extent to which they believed they will be free of cancer in the future, those respondents who indicated that their mastectomy was relatively unsuccessful typically gave responses such as the following:

> I really don't think I will ever be free of it; there is that possibility. I really--in my own mind I don't think I'll ever be. And I think my husband feels the same way; that now that I have it it's definitely in the body. I take chemotherapy and go through all the business with it, but I really don't thoroughly believe--well the doctor couldn't give me a guarantee, and so in that way there is that uncertainty.

> I know nowadays they tell us that it's a chronic disease. It's something you'll always have. Years ago it used to be they watched you for five years, and now they're watching like fifteen years in breast cancer. And eventually that may be the thing that will do me in, will be cancer. But it's--we all have these cancer cells in us.

As these statements illustrate, the belief that one's mastectomy was unsuccessful in removing all the cancer may have been related to a more fundamental belief about the self, in that one's self-definition became that of a chronic cancer victim.

The respondents who indicated that they will be able to avoid a recurrence of cancer in the future conveyed a general sense of control over life events, in addition to the belief that engaging in (or not engaging in) specific behaviors would enable them to avoid recurrent cancer. The perception that a recurrence of cancer in the future will be avoidable appeared to reflect a general belief in the controllability of outcomes, or the expectation that one's outcomes are dependent on one's voluntary responses (cf. Seligman, 1975). In particular, this group of respondents emphasized that they had coped successfully with events in the past, and that they will continue to do so in the future.

Those respondents who believed that they will be able to avoid a recurrence of cancer explained why they held this belief with statements such as the following:

> Because my life has always been this way. I've always been able to rise above problems. We've had a couple of tragedies in our lives. Our oldest daughter was killed in an automobile accident. She was only like 19 at the time. And we've been through this, and my husband and I-- I don't know, we've just managed to go through these things and come out of it okay.... So I've always been able to handle everything, and it's kind of nice to be back in the driver's seat again, as it were.

> The doctor knew that even if it was bad I would want to know, because I want to control myself. I don't think I would like someone to just say to me well, you're going to be all right, and underneath know you're not going to be. But it's all different instances for different people. Most of my life I've been alone and had to take care of myself, except for the years I was married; even then I took care of myself. So I think if you're that type of person you have to know all those things, because you have to know if you're going to be around for a while, sick for a while, or what. But I feel like I'm so lucky. How many people can really think that way after they've had it? I'm so fortunate, I thank God every day. It's a marvelous thing to come out of it and know that you're going to live.

Thus believing that one will be able to avoid a recurrence of cancer in the future seemed to represent a basic view of oneself as capable of controlling and coping with life events of many kinds.

The two beliefs which enabled mastectomy patients to feel invulnerable to recurrent cancer were each related to different causal attributions for victimization by breast cancer. Respondents who made causal attributions to the non-modifiable sources of other people or their personalities were likely to believe that their mastectomy was relatively unsuccessful in removing all the cancer. These respondents felt more vulnerable to a recurrence of cancer, and were poor copers. Avoidability

of recurrence, however, was positively associated with the perceived avoidability of breast cancer, which in turn was positively associated with causal attributions to the controllable factor of behavior. Mastectomy patients who felt that their behaviors had caused their breast cancer were likely to feel invulnerable to cancer in the future, and to be good copers. Therefore, mastectomees were found to cope effectively with victimization by breast cancer, to the extent that their attributions of causality enabled them to feel invulnerable to a recurrence of cancer in the future. This finding supports the theoretical formulation put forth by Janoff-Bulman and Lang-Gunn (1980), which suggests that invulnerability is a variable that mediates the relationship between causal attributions and coping with uncontrollable, negative events.

While attributions to the controllable source of one's behavior were linked to feelings of invulnerability and adaptive coping, attributions to the non-modifiable factors of other people and personality were linked to feelings of vulnerability and poor coping. The relationships found to exist between causal attributions and coping replicate the findings of previous research. The present study provides further support for Janoff-Bulman's (1979) distinction between behavioral and characterological self-blame, and her contention that behavioral self-blame fosters a general sense of control over life events. In her discussion of behavioral self-blame, Janoff-Bulman stated: "The future-oriented concerns of behavioral self-blamers need not focus exclusively on the future avoidability of the negative outcome for which the attributor is blaming him/herself; rather, behavioral

self-blame may promote a general belief in one's ability to avoid negative outcomes and to effect positive outcomes in the future" (p. 1800). In another study, Peterson, Schwartz, and Seligman (Note 4) found that behavioral attributions for bad events were negatively correlated with BDI scores, whereas characterological attributions for negative events were positively correlated with depression scores. These authors also found that characterological attributions for negative events were perceived as more stable and global (cf. Abramson, Seligman and Teasdale, 1978; Weiner et al., 1971) than behavioral attributions, and that events attributed to behavioral factors were perceived as more controllable than events attributed to characterological sources. Regarding causal attributions to other people for negative events, Madden and Janoff-Bulman (in press) examined wives' causal ascriptions for marital conflicts, and found that husband blame was negatively correlated with marital satisfaction and perceived control. Finally, in Bulman and Wortman's (1977) study of paralyzed accident victims, blaming another person for one's accident proved to be a successful predictor of poor coping.

An important difference between the findings of the Bulman and Wortman study and the present study concerns the relationship between the perceived avoidability of the victimizing event and coping with the event. Paralyzed accident victims were found to cope poorly if they believed that their victimization was avoidable, whereas perceiving the event of breast cancer as avoidable was linked indirectly to adaptive coping. The crucial distinction between the victimizing events of accidental paralysis and breast cancer probably lies in the possibility

of a recurrence of the negative outcome. In the Bulman and Wortman study the possibility of a recurrence was nonexistent, since the paralysis was considered medically irreversible for all subjects. In the case of victimization by cancer, however, the threat of a recurrence of the disease is a very real one, which may have profound psychological effects (Mages and Mendelsohn, 1979; Weisman, 1979). Therefore, as Bulman and Wortman suggested, perceptions of avoidability may be maladaptive when victims must cope with a non-modifiable, permanent outcome. The present study indicates, however, that perceived avoidability may be helpful in situations in which victims must cope with the threat of a repetition of the misfortune.

The hypothesis that the two direct predictors of invulnerability would represent two distinct constructs was supported. Not only were success of mastectomy and avoidability of recurrence related to different causal attributions, but the two beliefs were uncorrelated with one another. Furthermore, each belief was associated with the experience of different emotions. Respondents who believed that their mastectomy was unsuccessful in removing all the cancer were likely to feel ashamed or embarrassed, displeased with themselves, sad, unhappy, or depressed, and scared, frightened, worried, or anxious. Mastectomees who thought they will be able to avoid a recurrence of cancer in the future reported experiencing the emotions of happiness and serenity, and were likely to feel optimistic and hopeful. In short, perceiving one's mastectomy as successful was marked by the absence of negative emotions, while the perception that one will be able to avoid a recurrence of cancer was accompanied by the experience of positive emotions. Similar relationships

between cognitions and emotions have been found by Weiner and his colleagues (Weiner, Russell, and Lerman, 1978, 1979) in achievement-related situations. Weiner et al. have reported that there are groups of "outcome dependent-attribution independent" affects for success and failure, but that many affects are discriminably related to specific attributions. These authors have suggested that there are qualitative differences in feelings as a function of a variety of cognitions, and that causal attributions particularly influence emotional reactions in achievement-related contexts.

The post-hoc model which was constructed to depict the relationship between causal attributions and coping was quite similar to the model which resulted from the path analysis. In the post-hoc model, causal attributions to other people and personality were negatively correlated with success of mastectomy, while attribution to behavior was positively correlated with the perceived avoidability of breast cancer. Believing that the past event of breast cancer was avoidable was positively related to believing that a recurrence of cancer will be avoidable in the future. Success of mastectomy and avoidability of recurrence were positively linked to feeling invulnerable to recurrent cancer, which in turn was negatively related to depression scores. The similarity between the obtained path model and the post-hoc model provides further evidence for the validity of the relationships found to exist among the variables in the causal model.

There are important differences, however, between the obtained causal model and the post-hoc model which should not be overlooked, because they have theoretical implications for future research. The

post-hoc model indicates that causal attributions to physical factors for breast cancer are negatively correlated with feelings of invulnerability. Thus attributions to one's physical self do not appear to influence vulnerability indirectly, through the perceived success of mastectomy or avoidability of recurrence; rather, these attributions may be directly linked with the extent to which mastectomy patients believe they will be free of cancer in the future. The importance of this finding lies in the fact that attributions to physical, biological, or constitutional factors would probably be judged by many people as the most rational reason a victim could provide for why she got breast cancer. While observers might consider an attribution to physical factors to be the most logical explanation for having gotten breast cancer, the findings presented here suggest that such attributions might be associated with difficulties for the victims themselves. Specifically, attributions to one's physical self for the event of breast cancer might be related to maladaptive coping with the event, because of their implications for feelings of vulnerability to future cancer.

In the post-hoc model success of mastectomy is directly linked not only to causal attributions and invulnerability, but to coping as well. Respondents who believed that their mastectomy was unsuccessful in removing all the cancer were likely to have higher depression scores. As mentioned previously, Weiner and his colleagues (Weiner, Russell, and Lerman, 1978, 1979) have noted that in achievement-related contexts certain emotions are vividly experienced regardless of the perceived attribution, or the "why" of success and failure. It may be that in the case of victimization by breast cancer, the belief that one's

mastectomy was unsuccessful is associated with the experience of negative affect, and that this affective reaction is only partially influenced by one's causal attributions for breast cancer. The extent to which emotional responses to a victimizing event operate independently of causal attributions for the event remains to be determined by future research.

Although coping was successfully predicted by respondents' causal attributions, beliefs, and feelings of invulnerability, attempts were made to rule out an alternative explanation for the variability in coping responses. This alternative explanation concerned whether coping differences could be accounted for by the actual degree of serious illness. Analyses revealed that there were no significant differences in coping responses between subjects who had been found to have lymph node involvement and those respondents whose cancer was confined to the breast. The presence or absence of lymph node involvement is considered to be the foremost indicator of a breast cancer victim's medical prognosis (Kushner, 1975); however, the possibility that a relationship would exist between undergoing additional therapies and coping was also explored. While those respondents who had required treatments subsequent to mastectomy were found to be coping somewhat less effectively than those who had not, the hypothesis that additional therapy would be a predictor of perceived success of mastectomy was not supported. More importantly perhaps, the variable of additional therapy did not meet the criterion for inclusion in the post-hoc model. Thus causal attributions, beliefs, and invulnerability did prove to be indirectly or directly linked to coping in both the path model and the post-hoc

model, but additional therapy was not linked to coping in either model. These findings concerning the variables of lymph node involvement and additional therapy provide evidence that coping differences cannot be accounted for by the actual degree of serious illness. In fact, when respondents were asked in an open-ended question whether they had felt more vulnerable since their victimization by breast cancer, a negative correlation was found between the presence of lymph node involvement and a change toward greater feelings of vulnerability.

An understanding of the finding that coping responses were independent of medical prognosis may be gained by examining the statements of particular individuals who either had suffered lymph node involvement and undergone additional therapies, or who had not required post-mastectomy treatments because their lymph nodes had been free of cancer. For example, one respondent who was found to have no malignant nodes, and who had no additional therapies, scored above the mean on the BDI (i.e., had greater than average depression). When interviewed 16 months post-mastectomy, this respondent rated the extent to which she will be free of cancer in the future as "not at all," and explained her response by saying simply: "I don't because--I don't know, that's something--you can't believe you'll never have it." When asked whether she had felt more vulnerable since her discovery of breast cancer, this respondent said:

> Well sometimes when I get down, and if I go to the doctor it seems better that--well he tells me that everything is all right. Then I feel good, I really feel good then. And I know I'm going in that slump right now because, let's see, four months ago was the last time I went for a--I had a bone scan then. So everything came out normal, so I felt

> wonderful. But now I'm beginning to go back into that slump again, and the doctor said I just have to be reassured all the time, I guess.... Two of the doctors at my health plan told me I was cured. But I mean that's something that I don't really believe in because I still have doubts about that.

Another woman who had also been free of lymph node involvement and had not required additional therapies presented a similar point of view. She scored above the mean on the BDI, and rated the extent to which she will be free of cancer in the future as 2. Four months after her mastectomy, the latter respondent explained her rating by saying:

> No one I guess I'd say is going to be free, I don't believe. I can't believe that anybody in their right mind thinks that they're going to be totally free from it. It's something we live with constantly. Well anybody who's ever had cancer I think lives with it totally that it's going to come back. Lots of people it doesn't. But you live with that; you live with that fear. You try not to let it rule your life. You go on planning as though there's going to be a future, but you still are terribly wary of the fact that it's going to return.... After your first experience with cancer, particularly breast cancer I guess, you--if your big toe hurts you're sure you've got cancer in your big toe. And you're just resigned to the fact that every time you've got a stomachache you think oh boy, here we go again.

Contrasted to the statements of these respondents were the responses of a third woman, who had been found to have 13 cancerous nodes out of the 17 removed. She was in her third month of a year and a half of chemotherapy treatments, and scored below the mean on the BDI. This respondent rated the extent to which she will be free of cancer in the future as 10, and explained:

> There's a chance it could come back, but I'd say almost completely. I have a lot of faith in my doctor. He told me I'd be up walking around the next day, and I believed him.... So I believe the doctor and I have a lot of faith in him. He took the time to sit down and explain everything to me satisfactorily. So I just said hey--. And he gives me the best chance anybody could hope for.

Finally, a respondent who was almost finished with a year of chemotherapy treatments scored below the mean on the BDI, and rated the extent to which she will be free of cancer in the future as "completely." Even though her cancer had spread to the lymph nodes, this woman explained that she did not feel vulnerable to a recurrence of cancer in the future. She said:

> That's a hard question, because I feel that I had cancer--and I say had because I don't believe I have it anymore--and I consider it this way: that now that I don't have it anymore I'm no different than you; that our chances are the same of getting it. Because I had it once doesn't mean that I should have it again, or anything like that. I would say my chances are no different than someone that never had it.

Each respondent was asked to explain why she in particular, as opposed to women in general, had gotten breast cancer. At a subsequent point in the interview, each respondent was asked to explain how she had answered the question "Why me?" Although these two questions might appear to be indistinguishable from one another, the responses elicited for each question were of a strikingly different nature. When explaining why they in particular had gotten breast cancer, the respondents generally provided causes for their illness. The women attempted to report accurate medical theories concerning the etiology of their disease, and to give "scientific" explanations that are common in our culture today. Even though the respondents answered the question "Why?" in relation to their personal beliefs about breast cancer, there was often an impersonal flavor to these responses. Furthermore, for most of the respondents, scientific reasoning failed to provide a sufficient answer to the question "Why me?" Only seven respondents answered "Why me?" by bringing up physically-related causes of breast cancer, such

as hereditary, biological, or hormonal influences. The majority of respondents, however, answered "Why?" by mentioning these kinds of causal factors. It may be that in responding to "Why me?", subjects were attempting to account for the perceived selective incidence of breast cancer, and to find meaning in their victimization (cf. Janoff-Bulman and Lang-Gunn, 1980).

Medical explanations typically provided a satisfactory answer as to what caused a particular respondent's breast cancer. Such explanations, however, did not appear to adequately resolve the issue of the perceived selective incidence of the victimization. Of the 42 respondents, 39 reported that they had asked themselves the question "Why me?" This question may have arisen in respondents' efforts to find a personally satisfying explanation for having been "singled-out" to get breast cancer. The finding that only four respondents were unable to come up with a cause of their breast cancer, while twelve women were unable to answer "Why me?" suggests that the questions "Why?" and "Why me?" had very different meanings for the respondents. Sontag (1978) has noted that although cancer victims may have some understanding of the medical causes of their illness, they still may be at a loss to explain why the disease struck them in particular. She wrote:

> However steep its incidence in a population, TB--like cancer today--always seemed to be a mysterious disease of individuals, a deadly arrow that could strike anyone, that singled out its victims one by one.... In a similar way, the evidence that there are cancer-prone families and, possibly, a hereditary factor in cancer can be acknowledged without disturbing the belief that cancer is a disease that strikes each person, punitively, as an individual. No one asks "Why me?" who gets

> cholera or typhus. But "Why me?" (meaning "It's not fair") is the question of many who learn they have cancer. (p. 38)

Thus medical and cultural theories explained "Why?", but did not enable the respondents to make sense of the selective nature of their victimization by breast cancer. It appeared that medical and scientific explanations fell short of addressing one problem in particular, which is central to the issue of the perceived selective incidence of illness in general. This problem centered around a respondent's perception that many women presumably have the same "objective" medical predisposition to cancer as she had, and yet she was one of the few who actually got breast cancer. For example, although many of the respondents attributed their breast cancer to heredity, they could not explain why they had inherited the disease and other women in their family had not. Similarly, respondents who attributed the cause of their breast cancer to factors such as their lifestyle, hormones, an injury, or the environment, often pointed out that they knew of many women who have been subjected to the same factors and remain free of cancer. Presently, even medical experts cannot specify why, out of all the women who possess certain physical, hormonal, personality, or biological characteristics, only a select group gets breast cancer. Therefore, in attempting to solve the problem of "Why me?", respondents generally turned away from medical explanations. Zola (1972) has indicated that the distinction suggested here between the questions "Why?" and "Why me?" is one that frequently appears in the case of victimization by illness. This author has noted that when individuals are asked what caused their illness (e.g., heart disease or diabetes)

the scientific terminology, if not the content, of the response is often quite accurate. If, however, such inquiries into the perceived cause of illness are followed by probes such as, "Of all the people in your community, family, etc., who were exposed to X, why did you get ...?", then "the rational scientific veneer is pierced and concern with personal and moral responsibility emerges quite strikingly. Indeed the issue 'Why me?' becomes of great concern and is generally expressed in quite moral terms of what they did wrong" (p. 491).

Researchers have also noted that the issue of meaning arises as a salient reaction to victimization (Bulman and Wortman, 1977; Chodoff, Friedman and Hamburg, 1964; Silver and Wortman, 1980). In fact, Frankl (1963) has suggested that the search for meaning may be a powerful human motivation. Many of the statements provided by the respondents as an answer to "Why me?" suggest a concern for meaning, and for living in an orderly, understandable world. This seems to be the case for those respondents who interpreted their victimization as an act of God, as well as those who reevaluated their victimization positively. Furthermore, those respondents who fell into the category of "Why not me?" (e.g., "Everyone has to face problems in life.") also appeared to view their experience with breast cancer from a meaningful or purposeful perspective. These categories are consistent with the idea that respondents seemed compelled to make sense of their misfortune. Thus medical or cultural theories in response to "Why?" served to explain what had caused the event of breast cancer to occur. On the other hand, responses to "Why me?" served to provide a broader, more meaningful framework in which breast cancer victims could cope with their

aversive experience.

The present study suggests that breast cancer victims' perceptions of their vulnerability contribute to their psychological state; mastectomy patients were found to cope effectively, to the extent that they felt invulnerable to a recurrence of cancer in the future. As a next step, it seems important to consider the relationship between perceived vulnerability and physical vulnerability. That is, it may be that a breast cancer victim's psychological state influences the actual progression of her disease. There now exists a large body of research on the role that psychological factors play in the etiology and development of cancer. (For a review of this literature, see Cohen, 1979.) Few research findings, however, specify how such relationships are mediated psychologically and biologically. Although additional research is clearly needed before the psychological-biological links regarding cancer onset and progression are fully understood, there appears to be a growing acceptance of the idea that such links may exist (see Amkraut and Solomon, 1974). In order to explore the relationship between psychological invulnerability to cancer and actual occurrence of the disease, follow-up information for the sample in this study will be obtained at some time in the future. This information will concern whether or not respondents have survived, and whether they have experienced recurrent or metastatic cancer. It would also be of interest to examine how respondents' attributions of causality change over time, and how they, and the issue of meaning, are influenced by the presence or absence of progressive illness. Finally, the extent to which the present findings can be generalized to different victimizing

circumstances warrants further research. It has already been suggested that these findings may not apply to victims of permanent negative outcomes. It is likely that the present investigation will be most relevant when considered within the general contexts of cancer, surgery, and chronic illness. However, it might also have implications for victims of other uncontrollable, negative events.

Footnotes

[1]In medical terminology, the words recurrence and metastasis are not synonomous, though both refer to second cancers. Recurrences are new cancers that appear in the immediate area of the first; for example, in the second breast. Metastases are tumors that have spread to other (often quite distant) parts of the body via the bloodstream or lymphatic system. Recurrences are more likely to be found early when treatment can be effective. Metastases are more dangerous because they can be far advanced before their discovery (Kushner, 1975). In keeping with the psychological literature on victimization by cancer, the medical distinction between recurrence and metastasis is not made in this paper unless specifically noted. Thus recurrence refers to a second cancer of either kind.

[2]In accordance with the first criterion for sample selection, no breast cancer victims were interviewed whose cancers were known to have spread to parts of the body other than the breasts. However, this criterion did not eliminate women from the sample who had experienced a local recurrence of cancer subsequent to a first mastectomy. Women who had undergone two mastectomies were selected for the sample, if they had undergone the second mastectomy within two years prior to being interviewed.

[3]Respondents who had undergone two mastectomies were asked to answer the interview questions in relation to their most recent mastectomy.

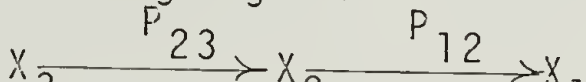
[4]Researchers generally agree that reactions to breast cancer and mastectomy differ depending on the age and age-related stress experiences of the patient, although general agreement does not exist concerning at what ages stronger emotional reactions are to be expected (see Freeman, 1973; Klein, 1971; Kushner, 1975; Meyerowitz, 1980; Renneker and Cutler, 1952; Taylor and Levin, 1975). The risk of breast cancer increases with age, and every woman over age 35 is considered to be at high risk of contracting the disease. Breast cancer is the leading cause of all deaths in women 40 to 44 years old, while 75% of women with breast cancer are over age 50 (ACS, Note 1). The present study was initially designed to consider age as a factor in sample selection. Specifically, it was originally intended that the sample be restricted to women between the ages of 40 and 60 years, in order to limit variability of response. However, as respondents were recruited for the study it became clear that such an age restriction would create difficulties in obtaining a sample of adequate size; therefore, the age restriction was dropped. The sample included one respondent (2%) between the ages of 20 and 29; five respondents (12%) were between the ages of 30 and 39; eleven respondents (26%) were between 40 and 49; ten respondents (24%) were age 50 to 59; ten respondents (24%) were between 60 and 69; four respondents (10%) were between 70 and 79 years

old; and one respondent (2%) was age 80 or older. Thus in the present study 60% of the respondents were age 50 or older, which indicates that the sample was somewhat younger than the population of mastectomy patients in the U.S.

[5]In a partial mastectomy, only a portion of the breast is removed, including the cancer and a surrounding margin of breast tissue. A radical mastectomy includes removal of the breast, axillary lymph nodes, and pectoral muscles.

[6]It was expected that causal attributions to environment for breast cancer would consist mainly of attributions to objects, such as microwave ovens, color television sets, and certain types of foods. Because it would be feasible for one to avoid contact with these objects if they were perceived as harmful, environment was considered to be a largely controllable causal factor.

[7]Path analysis is primarily a method of decomposing and interpreting linear relationships among a set of variables by assuming (1) that a causal order among these variables is known and (2) that the relationships among these variables are causally closed. The path model proposed in the present study was a restricted model, in which other assumptions are added. A simple example of a restricted model would be that illustrated by the following figure:



The additional assumption implied by the figure is that $P_{13}=0$. The path from X_2 to X_1 is overidentified, because there are two different ways to estimate P_{12}. In general, the estimate of an overidentified path coefficient is obtained from ordinary regression in which the causal variables assumed to have direct causal effects on a given dependent variable are included as predictors (Goldberger, 1970).

[8]Also of interest in the present study was the extent to which coping differences could be accounted for by whether or not respondents had undergone therapies in addition to mastectomy. Doctors have differing practices regarding the conditions under which they prescribe additional treatments following mastectomy. Among the factors which determine whether or not additional treatments are prescribed are: the age of the patient, the patient's family history of breast cancer, the location, size, and type of tumor, and the kind of mastectomy undergone. Additional therapies are generally prescribed following mastectomy when cancer has spread to axillary lymph nodes. As previously discussed in this paper, researchers have suggested that the coping mechanisms required to deal with additional treatments may differ from those required in dealing with mastectomy alone (see Meyerowitz, 1980). T-tests were performed to determine whether those respondents who had undergone treatments in addition to mastectomy differed from those respondents who had not required additional therapies, on any of the four coping measures. The results of the t-tests showed marginal

effects for BDI, Emotions, and Activities. The group of respondents who had undergone additional therapies were more depressed ($t(38)=-1.79$, $p < .10$), were less likely to experience positive emotions ($t(35)=1.91$, $p < .10$), and were less active ($t(35)=2.00$, $p < .10$). T-tests were also performed to determine whether those respondents who were undergoing treatments at the time they were interviewed differed from those respondents who were not on any of the coping variables. The results of the t-tests revealed a significant effect for BDI, and a marginally significant effect for Activities. Those respondents who were currently undergoing additional treatments were more depressed ($t(37)=-2.06$, $p < .05$) and less active ($t(34)=1.99$, $p < .10$).

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APPENDIX

Letter Sent to Physicians for Recruitment of Respondents

Dear Dr. _____,

I am a doctoral student in social psychology at the University of Massachusetts, Amherst. (Name of referral source) suggested that I contact you to discuss research I am currently conducting on mastectomy patients. I am interviewing women who have had a mastectomy within the past two years, for the general purpose of gaining a better understanding of psychological reactions to breast cancer and mastectomy. In particular, the study is designed to investigate the relationship between mastectomy patients' causal attributions for their breast cancer (i.e., their explanations as to why they got cancer), and subsequent coping with breast cancer and mastectomy. My advisor is Dr. Ronnie Janoff-Bulman, a professor in the Department of Psychology at UMass.

This study has been approved by the Psychology Department's Human Subjects Committee. In accordance with the American Psychological Association's guidelines on research involving human subjects, each woman interviewed signs a consent form prior to the interview. This form describes the nature of the interview, and insures that all responses will be kept confidential. To this date I have interviewed (#) mastectomy patients, and although the topic is an extremely sensitive one, I have been impressed by the women's openness in discussing their experience with breast cancer.

In order to have a representative sample, I would like to interview mastectomy patients who have been treated through the agencies with which you are associated. With the cooperation of several physicians in western Massachusetts, I have contacted women for participation in the study without violating their right to confidentiality. Thus, while I have suggestions as to how I might contact patients, the best method would be left for you to decide.

I will be calling you soon in the hope that you will be willing to cooperate with the study. I will certainly provide any more information you might require at that time. If you would prefer to contact me, I can be reached at home at (telephone number). Or, you could call Dr. Janoff-Bulman at (telephone number). We can both be reached at the address below. Thank you for your consideration.

Sincerely,

Christine Timko
Department of Psychology
Tobin Hall
University of Massachusetts
Amherst, MA 01003

Consent Form

The purpose of this study is to gain an understanding of how women react to breast cancer and mastectomy. You will be asked to complete a questionnaire about your feelings, as well as to engage in an interview about your experience with breast cancer. What you say will be entirely confidential and your name will never be associated with your responses in the report of this study; you will be assigned a number, by which all records of this interview will be identified. You will be asked if you are willing to have the interview recorded; if you do not wish to be tape recorded, the interviewer will take notes during the interview session.

The interviewer will be happy to answer any further questions you may have about the study. Although no distress is expected, you are free to refuse to answer any questions asked of you. Further, please feel free to terminate the interview at any time.

I have read the above statement and have had the opportunity to ask any questions I have about the study. I agree to participate.

_____

signature date

Background Information

(1) What is your present marital status? (check one)

_____Single, never married
_____Married, living with husband
_____Married, not living with husband
_____Divorced
_____Widowed

(2) Has your marital status changed since the time of your mastectomy?

_____no
_____yes

If yes, how has it changed?

_____

(3) Do you have any children?

_____no
_____yes

If yes, what are their sex and ages?

a) _____male_____female; _____years old.
b) _____male_____female; _____years old.
c) _____male_____female; _____years old.
d) _____male_____female; _____years old.
e) _____male_____female; _____years old.
f) _____male_____female; _____years old.
g) _____male_____female; _____years old.
h) _____male_____female; _____years old.

(4) How old are you?

_____years old.

(5) How old is your husband?

_____years old.

(6) Your race (check one).

_____White
_____Black
_____Hispanic
_____Oriental
_____Other:_____

(7) Husband's race (check one).

_____White
_____Black
_____Hispanic
_____Oriental
_____Other:_____

(8) Your religion (check one).

_____Catholic
_____Protestant
_____Jewish
_____Other:_____

(9) Husband's religion (check one).

_____Catholic
_____Protestant
_____Jewish
_____Other:_____

(10) What was the last year of school you completed?

_____

(11) What was the last year of school your husband completed?

_____

(12) Were you working at the time you had your mastectomy?

_____no
_____yes

If yes, what was your occupation?

_____

(13) Since the mastectomy, have you returned to the same job or begun a new job?

_____no
_____yes

If you changed your place of employment or took employment for the first time, what is your present occupation?

_____

(14) What is your husband's occupation?

_____

(15) What is your family's annual income?

_____$0 - $5,000
_____$5,001 - $10,000
_____$10,001 - $20,000
_____$20,001 and above

Beck Depression Inventory

Directions: For each group of items, please circle the one item which best describes your feelings. Since this questionnaire asks about feelings, there are no right or wrong answers. Please remember to make a choice for every group of items.

A.
0 I do not feel sad
1 I feel blue or sad
2a I am blue or sad all the time and I can't snap out of it
2b I am so sad or unhappy that it is quite painful
3 I am so sad or unhappy that I can't stand it

B.
0 I am not particularly pessimistic or discouraged about the future
1a I feel discouraged about the future
2a I feel I have nothing to look forward to
2b I feel that I won't ever get over my troubles
3 I feel that the future is hopeless and that things cannot improve

C.
0 I do not feel like a failure
1 I feel I have failed more than the average person
2a I feel I have accomplished very little that is worthwhile or that means anything
2b As I look back on my life all I can see is a lot of failures
3 I feel I am a complete failure as a person (parent, husband, wife)

D.
0 I am not particularly dissatisfied
1a I feel bored most of the time
1b I don't enjoy things the way I used to
2 I don't get satisfaction out of anything any more
3 I am dissatisfied with everything

E.
0 I don't feel particularly guilty
1 I feel bad or unworthy a good part of the time
2a I feel quite guilty
2b I feel bad or unworthy practically all the time now
3 I feel as though I am very bad or worthless

F.
0 I don't feel I am being punished
1 I have a feeling that something bad may happen to me
2 I feel I am being punished or will be punished
3a I feel I deserve to be punished
3b I want to be punished

G.
0 I don't feel disappointed in myself
1a I am disappointed in myself
1b I don't like myself
2 I am disgusted with myself
3 I hate myself

H. 0 I don't feel I am any worse than anybody else
2 I am critical of myself for my weaknesses or mistakes
2 I blame myself for my faults
3 I blame myself for everything bad that happens

I. 0 I don't have any thoughts of harming myself
1 I have thoughts of harming myself but I would not carry them out
2a I feel I would be better off dead
2b I feel my family would be better off if I were dead
3a I have definite plans about committing suicide
3b I would kill myself if I could

J. 0 I don't cry any more than usual
1 I cry more now than I used to
2 I cry all the time now. I can't stop it
3 I used to be able to cry but now I can't cry at all even though I want to

K. 0 I am no more irritated now than I ever am
1 I get annoyed or irritated more easily than I used to
2 I feel irritated all the time
3 I don't get irritated at all at the things that used to irritate me

L. 0 I have not lost interest in other people
1 I am less interested in other people now than I used to be
2 I have lost most of my interest in other people and have little feeling for them
3 I have lost all my interest in other people and don't care about them at all

M. 0 I make decisions about as well as ever
1 I try to put off making decisions
2 I have great difficulty in making decisions
3 I can't make any decisions at all any more

N. 0 I don't feel I look any worse than I used to
1 I am worried that I am looking old or unattractive
2 I feel that there are permanent changes in my appearance and they make me look unattractive
3 I feel that I am ugly or repulsive looking

O. 0 I can work about as well as before
1a It takes extra effort to get started at doing something
1b I don't work as well as I used to
2 I have to push myself very hard to do anything
3 I can't do any work at all

P. 0 I can sleep as well as usual
1 I wake up more tired in the morning than I used to
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
3 I wake up early every day and can't get more than 5 hours sleep

Q. 0 I don't get any more tired than usual
1 I get tired more easily than I used to
2 I get tired from doing anything
3 I get too tired to do anything

R. 0 My appetite is no worse than usual
1 My appetite is not as good as it used to be
2 My appetite is much worse now
3 I have no appetite at all any more

S. 0 I haven't lost much weight, if any, lately
1 I have lost more than 5 pounds
2 I have lost more than 10 pounds
3 I have lost more than 15 pounds

T. 0 I am no more concerned about my health than usual
1 I am concerned about aches and pains or upset stomach or constipation
2 I am so concerned with how I feel or what I feel that it's hard to think of much else
3 I am completely absorbed in what I feel

U. 0 I have not noticed any recent change in my interest in sex
1 I am less interested in sex than I used to be
2 I am much less interested in sex now
3 I have lost interest in sex completely

Interview Schedule for Respondents

I. (1) How much time went by between when you found a symptom of breast cancer and when you went to the doctor about it?

(2) How much time went by between your first visit to the doctor about a breast cancer symptom and your biopsy?

(3) Did you know for certain before the actual mastectomy that your breast would be removed? In other words, was the diagnosis of cancer made in the same procedure as your mastectomy or in a different procedure?

(4) (If appropriate) How much time went by between your biopsy and your mastectomy?

(5) How long has it been since your mastectomy?

(6) What kind of mastectomy did you have; that is, if you know?

(7) On which side was your mastectomy? What I want to know is, was it on the same side as the hand you write with?

(8) Did you have any additional therapies after your mastectomy, such as radiation therapy or chemotherapy? If so, what kind of therapy did you have and how long did you have that for?

(9) When you first got home from the hospital, do you recall having any unusual physical after-effects from the operation? What I mean is, did you have any complications in your recovery? If so, what were those and how long did they last?

(10) How long was it after you left the hospital that you returned to your job and/or your normal daily activities?

(11) Are you considering reconstructive surgery?

(12) Have you received any counseling since you discovered you had breast cancer? If so, who provided the counseling, how long did it last, and how helpful was it to you? Did you see a Reach to Recovery volunteer? If so, how helpful was she to you?

(13) At the time of your mastectomy, did you know of any friends or family members who had had a mastectomy? Since the mastectomy, do you know of any others who have had a mastectomy? If so, how did it turn out for her/them?

(14) What are your major sources of information about breast cancer?

_____Doctor

_____Other hospital staff; who?_____

_____Relatives

_____Friends

_____Magazines

_____Newspapers

_____Books

_____Television

_____Radio

_____Reach to Recovery

_____Other:_____

II. (1) In general, why do you think women get breast cancer?

(2) In particular, why do you think you got breast cancer?

(3) To what extent do you feel each of the following factors was a cause of your getting cancer?

a. Self

1 2 3 4 5 6 7 8 9 10 11

not at all a cause — completely a cause

Please explain why you answered as you did.

b. Husband

1 2 3 4 5 6 7 8 9 10 11

not at all a cause — completely a cause

Please explain why you answered as you did.

c. Other people

1 2 3 4 5 6 7 8 9 10 11
not at all a cause — completely a cause

Please explain why you answered as you did.

d. Environment

1 2 3 4 5 6 7 8 9 10 11
not at all a cause — completely a cause

Please explain why you answered as you did.

e. Chance

1 2 3 4 5 6 7 8 9 10 11
not at all a cause — completely a cause

Please explain why you answered as you did.

(4) To what extent do you think you got cancer

a. because of the kind of person you are physically, that is, because of biological or constitutional factors?

1 2 3 4 5 6 7 8 9 10 11
not at all — completely

Please explain why you answered as you did.

b. because of the kind of personality you have, that is, because of some character trait(s) you have?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

Please explain why you answered as you did.

c. because of something you did, that is, because of some behavior(s) you engaged in or failed to engage in?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

Please explain why you answered as you did.

(5) To what extent do you believe that you could have avoided getting breast cancer?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

Do you think there is anything you could have done to avoid getting breast cancer? If so, what?

(6) To what extent do you think the mastectomy was successful in removing all the cancer?

1 2 3 4 5 6 7 8 9 10 11
not at all completely
successful successful

Please explain why you answered as you did.

(7) To what extent do you believe you'll be free of cancer in the future?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

Please explain why you answered as you did.

(8) To what extent do you believe you will be able to avoid a recurrence of cancer in the future?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

Do you think there is anything you can do to avoid a recurrence of cancer? If so, what?

III. (1) Have you ever asked yourself the question "Why me?" and, if so, how did you answer it?

(2) What changes, if any, have occurred in your view of the world because of your breast cancer? For example, has it challenged any of your basic assumptions about such things as your own vulnerability, or how fair outcomes are?

IV. (1) To what extent did you experience each of the following emotions immediately following your mastectomy? To what extent are you experiencing each of the same emotions at this stage in time, also with respect to your mastectomy?

a. Angry-out: angry or disgusted with someone or something (not yourself)

Immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all very strongly
experienced experienced

Now

1 2 3 4 5 6 7 8 9 10 11

not at all experiencing — very strongly experiencing

Please explain why you felt/feel as you do--to what were/ are you reacting?

b. Ashamed or embarrassed

Immediately after

1 2 3 4 5 6 7 8 9 10 11

not at all experienced — very strongly experienced

Now

1 2 3 4 5 6 7 8 9 10 11

not at all experiencing — very strongly experiencing

Please explain why you felt/feel as you do--to what were/ are you reacting?

c. Displeased with self: guilty, angry at, or disgusted with yourself

Immediately after

1 2 3 4 5 6 7 8 9 10 11

not at all experienced — very strongly experienced

Now

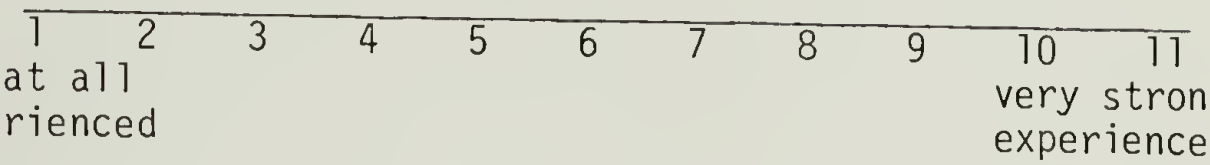
1 2 3 4 5 6 7 8 9 10 11

not at all experiencing — very strongly experiencing

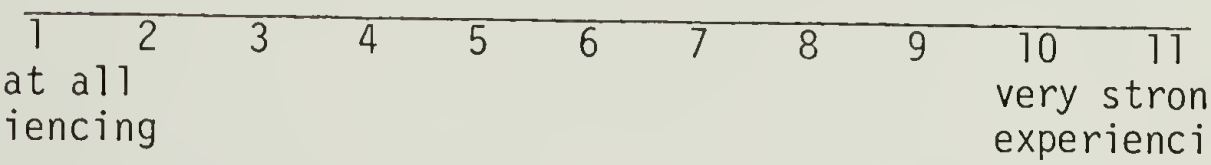
Please explain why you felt/feel as you do--to what were/ are you reacting?

d. Happy or serene

Immediately after



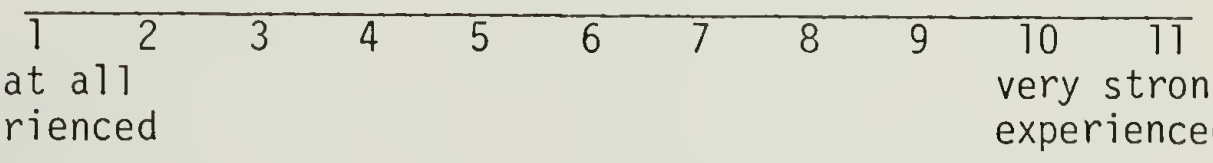
Now



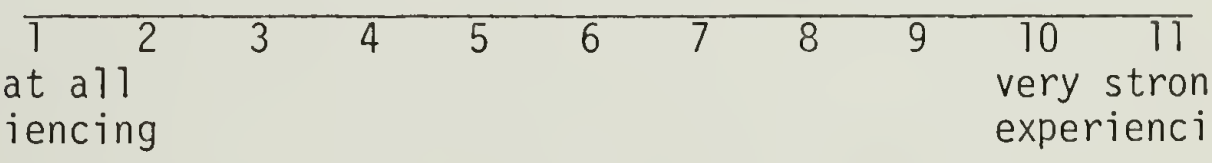
Please explain why you felt/feel as you do--to what were/ are you reacting?

e. Optimistic or hopeful

Immediately after



Now



Please explain why you felt/feel as you do--to what were/ are you reacting?

f. Powerful, strong, or in-control-of-events

Immediately after

1 2 3 4 5 6 7 8 9 10 11

not at all experienced — very strongly experienced

Now

1 2 3 4 5 6 7 8 9 10 11

not at all experiencing — very strongly experiencing

Please explain why you felt/feel as you do--to what were/ are you reacting?

g. Proud, worthy, or pleased with self

Immediately after

1 2 3 4 5 6 7 8 9 10 11

not at all experienced — very strongly experienced

Now

1 2 3 4 5 6 7 8 9 10 11

not at all experiencing — very strongly experiencing

Please explain why you felt/feel as you do--to what were/ are you reacting?

h. Sad, unhappy, or depressed

Immediately after

1 2 3 4 5 6 7 8 9 10 11

not at all experienced — very strongly experienced

Now

1 2 3 4 5 6 7 8 9 10 11

not at all experiencing — very strongly experiencing

Please explain why you felt/feel as you do--to what were/are you reacting?

i. Scared, frightened, worried, or anxious

Immediately after

1 2 3 4 5 6 7 8 9 10 11

not at all experienced — very strongly experienced

Now

1 2 3 4 5 6 7 8 9 10 11

not at all experiencing — very strongly experiencing

Please explain why you felt/feel as you do--to what were/are you reacting?

(2) Please rate the extent of your self-esteem immediately following your mastectomy and at this stage in time.

Immediately after

1 2 3 4 5 6 7 8 9 10 11

extremely low — extremely high

Now

1 2 3 4 5 6 7 8 9 10 11

extremely low — extremely high

(3) To what extent is your body important for your self-image as a woman?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

To what extent are breasts important for your self-image as a woman?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

V. (1) Compared to before the mastectomy, to what extent are you engaged in your job at the present time?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

(2) Compared to before the mastectomy, to what extent are you carrying out daily self-care activities at the present time, such as bathing, dressing, and so on?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

(3) Compared to before the mastectomy, to what extent are you carrying out household tasks at the present time, such as shopping, cleaning, and so on?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

(4) Compared to before the mastectomy, to what extent do you engage in leisure activities at home at the present time, such as watching television, reading, working on hobbies, and so on?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

(5) Compared to before the mastectomy, to what extent do you engage in leisure activities outside of your home at the present time, such as going to dinners, movies, sporting events, and so on?

1 2 3 4 5 6 7 8 9 10 11

much less same much more

(6) Compared to before the mastectomy, to what extent are you satisfied with your relationship with your husband at the present time?

1 2 3 4 5 6 7 8 9 10 11

much less same much more

Has your relationship with your husband changed in any way since the mastectomy? If so, how has it changed?

(7) Compared to before the mastectomy, to what extent are you satisfied with your relationships with your children at the present time?

1 2 3 4 5 6 7 8 9 10 11

much less same much more

Have your relationships with your children changed in any way since your mastectomy? If so, how have they changed?

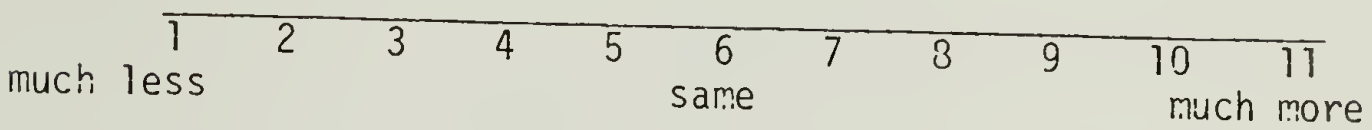
(8) Compared to before the mastectomy, to what extent are you satisfied with your relationships with your friends at the present time?

1 2 3 4 5 6 7 8 9 10 11

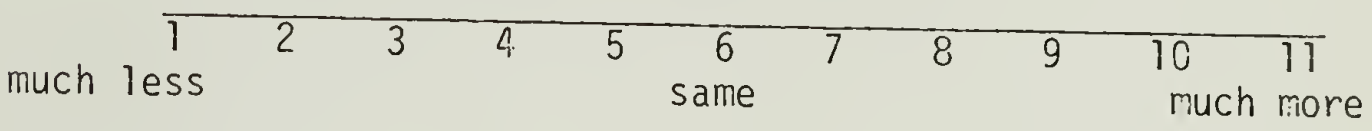
much less same much more

Have your relationships with your friends changed in any way since your mastectomy? If so, how have they changed?

(9) Compared to before the mastectomy, to what extent do you engage in sexual relations at the present time?



(10) Compared to before the mastectomy, to what extent are you functioning adequately overall at the present time, considering all the things we just talked about?



Consent Form

The purpose of this study is to gain an understanding of how women and their husbands react to breast cancer and mastectomy. You will be asked to fill out a questionnaire about your wife's experience with breast cancer. What you say will be entirely confidential and your name will never be associated with your responses in the report of this study; you will be assigned a number, by which all records of this questionnaire will be identified. You are free to refuse to answer any questions asked of you.

I have read the above statement. I agree to participate.

_____

Signature Date

Questionnaire for Husbands

I. (1) What was your wife's general reaction when she found out she had breast cancer?

(2) What was your general reaction when you found out your wife had breast cancer?

II. (1) In general, why do you think women get breast cancer?

(2) In particular, why do you think your wife got breast cancer?

(3) To what extent do you feel each of the following factors was a cause of your wife getting cancer?

(a) Self

1 2 3 4 5 6 7 8 9 10 11

not at all a cause — completely a cause

Please explain why you answered as you did.

(b) Wife

1 2 3 4 5 6 7 8 9 10 11

not at all a cause — completely a cause

Please explain why you answered as you did.

(c) Other people

1 2 3 4 5 6 7 8 9 10 11
not at all a cause — completely a cause

Please explain why you answered as you did.

(d) Environment

1 2 3 4 5 6 7 8 9 10 11
not at all a cause — completely a cause

Please explain why you answered as you did.

(e) Chance

1 2 3 4 5 6 7 8 9 10 11
not at all a cause — completely a cause

Please explain why you answered as you did.

(4) To what extent do you think your wife got cancer

(a) because of the kind of person she is physically, that is, because of biological or constitutional factors?

1 2 3 4 5 6 7 8 9 10 11
not at all — completely

Please explain why you answered as you did.

(b) because of the kind of personality she has, that is, because of some character trait(s) she has?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

Please explain why you answered as you did.

(c) because of something she did, that is, because of some behavior(s) she engaged in or failed to engage in?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

Please explain why you answered as you did.

(5) To what extent do you believe that your wife could have avoided getting breast cancer?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

To what extent do you believe that you could have helped your wife avoid getting breast cancer?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

Do you think there is anything you or your wife could have done to avoid her getting breast cancer? If so, what?

(6) To what extent do you think your wife's mastectomy was successful in removing all the cancer?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

Please explain why you answered as you did.

(7) To what extent do you believe your wife will be free of cancer in the future?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

Please explain why you answered as you did.

(8) To what extent do you believe your wife will be able to avoid a recurrence of cancer in the future?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

To what extent do you believe you will be able to help your wife avoid having a recurrence of cancer in the future?

1 2 3 4 5 6 7 8 9 10 11
not at all completely

Do you think there is anything you or your wife can do to avoid a recurrence of her cancer? If so, what?

III. (1) Have you ever asked yourself the question "Why her?", and if so, how did you answer it?

(2) What changes, if any, have occurred in your view of the world because of your wife's breast cancer? For example, has it challenged any of your basic assumptions about such things as your own vulnerability, or how fair outcomes are?

IV. (1) To what extent did your wife experience each of the following emotions immediately following her mastectomy? To what extent is she experiencing each of the same emotions at this stage in time, also with respect to her mastectomy? To what extent did you experience each of the following emotions immediately following your wife's mastectomy?
To what extent are you experiencing each of the same emotions at this stage in time, also with respect to your wife's mastectomy?

(a) Angry out: angry or disgusted with someone or something (not yourself)

Wife immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Wife now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

Yourself immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Yourself now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

(b) Ashamed or embarrassed

Wife immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Wife now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

Yourself immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Yourself now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

(c) Displeased with self: guilty, angry at, or disgusted with yourself

Wife immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Wife now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

Yourself immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Yourself now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

(d) Happy or serene

Wife immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Wife now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

Yourself immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Yourself now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

(e) Optimistic or hopeful

Wife immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Wife now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

Yourself immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Yourself now

1 2 3 4 5 6 7 8 9 10 11

not at all experiencing — very strongly experiencing

(f) Powerful, strong, or in-control-of-events

Wife immediately after

1 2 3 4 5 6 7 8 9 10 11

not at all experienced — very strongly experienced

Wife now

1 2 3 4 5 6 7 8 9 10 11

not at all experiencing — very strongly experiencing

Yourself immediately after

1 2 3 4 5 6 7 8 9 10 11

not at all experienced — very strongly experienced

Yourself now

1 2 3 4 5 6 7 8 9 10 11

not at all experiencing — very strongly experiencing

(g) Proud, worthy, or pleased with self

Wife immediately after

1 2 3 4 5 6 7 8 9 10 11

not at all experienced — very strongly experienced

Wife now

1 2 3 4 5 6 7 8 9 10 11

not at all experiencing — very strongly experiencing

Yourself immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Yourself now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

(h) Sad, unhappy, or depressed

Wife immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Wife now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

Yourself immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Yourself now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

(i) Scared, frightened, worried, or anxious

Wife immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Wife now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

Yourself immediately after

1 2 3 4 5 6 7 8 9 10 11
not at all experienced — very strongly experienced

Yourself now

1 2 3 4 5 6 7 8 9 10 11
not at all experiencing — very strongly experiencing

(2) Please rate the extent of your wife's self-esteem immediately following her mastectomy and at this stage in time.

Wife immediately after

1 2 3 4 5 6 7 8 9 10 11
extremely low — extremely high

Wife now

1 2 3 4 5 6 7 8 9 10 11
extremely low — extremely high

(3) To what extent are breasts important for your wife's self-image as a woman?

1 2 3 4 5 6 7 8 9 10 11
not at all — completely

To what extent are breasts important for your image of womanhood?

1 2 3 4 5 6 7 8 9 10 11
not at all — completely

V. (1) Compared to before the mastectomy, to what extent is your wife engaged in her job at the present time?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

(2) Compared to before the mastectomy, to what extent is your wife carrying out daily self-care activities at the present time, such as bathing, dressing, and so on?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

(3) Compared to before the mastectomy, to what extent is your wife carrying out household tasks at the present time, such as shopping, cleaning, and so on?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

(4) Compared to before the mastectomy, to what extent does your wife engage in leisure activities at home at the present time, such as watching television, reading, working on hobbies, and so on?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

(5) Compared to before the mastectomy, to what extent does your wife engage in leisure activities outside of your home at the present time, such as going to dinners, movies, sporting events, and so on?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

(6) Compared to before the mastectomy, to what extent is your wife satisfied with her relationship with you at the present time?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

Compared to before the mastectomy, to what extent are you satisfied with your relationship with your wife at the present time?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

Has your relationship with your wife changed in any way since her mastectomy? If so, how has it changed?

(7) Compared to before the mastectomy, to what extent is your wife satisfied with her relationships with your children at the present time?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

Compared to before the mastectomy, to what extent are you satisfied with your relationships with your children at the present time?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

Have your or your wife's relationships with your children changed in any way since your wife's mastectomy? If so, how have they changed?

(8) Compared to before the mastectomy, to what extent is your wife satisfied with her relationships with her friends at the present time?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

Compared to before the mastectomy, to what extent are you satisfied with your relationships with your friends at the present time?

1 2 3 4 5 6 7 8 9 10 11
much less same much more

Have your or your wife's relationships with your friends changed in any way since your wife's mastectomy? If so, how have they changed?

(9) Compared to before the mastectomy, to what extent do you and your wife engage in sexual relations at the present time?

1 2 3 4 5 6 7 8 9 10 11

much less same much more

(10) Compared to before the mastectomy, to what extent is your wife functioning adequately overall at the present time?

1 2 3 4 5 6 7 8 9 10 11

much less same much more

Compared to before the mastectomy, to what extent are you functioning adequately overall at the present time?

1 2 3 4 5 6 7 8 9 10 11

much less same much more